

# SHOOTOUT: APS-C CAMERAS

# HMM

MALAYSIA

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ALL EYES  
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MWC 2015  
HIGHLIGHTS

# TECH THAT DRIVES PHOTOGRAPHY

*Looking beyond megapixel count*



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# COMPUTEX TAIPEI

## Shaping the Future!



COMPUTEX TAIPEI, the second largest ICT trade show in the world, is scheduled to take place June 2<sup>nd</sup> to 6<sup>th</sup>, 2015. The full capacity of over 5,000 booths in the Nangang and Xinyi exhibition halls, sold out faster than expected by last December, will host more than domestic and overseas 1,700 exhibitors showcasing their most innovative and trendy products. This high-power tradeshow, which explores every facet of ICT, is ready to generate massive business opportunities for visitors and exhibitors from all over the world.

The main themes for COMPUTEX 2015 are “the Internet of Things”, “Mobile Applications”, and “Cloud Technology and Services”.

### Two new exhibition areas to reflect industry trends

In response to the industry trends, COMPUTEX will premiere the “Wearable Technology” and “3D Business and Applications” areas in 2015.

With the increasing demand for mobile devices and the Internet of Things driving the growth of big data and cloud services, the hot trend for 2015 continues to be the fast-growing sector of wearable technology. Taiwanese manufacturers serve as the powerhouse of the world’s most popular mobile devices and have the technological know-how to keep up with the latest tech trends.



See you **JUNE 2-6**

Last year's COMPUTEX witnessed an explosion of wearable devices, demonstrating innovation and competition among vendors. TAITRA, the organizer, projects that wearable devices at COMPUTEX 2015 will grow exponentially from last year's edition.

"3D Business and Applications" will be packed with the latest 3D printers and related applications.

Other hot topics of the show include smart handhelds, embedded technology, Smart Home, ICT security, next-gen USB, and auto multimedia. Forums and events at the show will be designed to guide the ICT industry through rapidly changing technology.

### **Super friendly features winning recognition**

In recognition of their continuous effort to upgrade buyer services and make it the friendliest tradeshow, the COMPUTEX organizing team received the prestigious UFI Marketing Award with the show's exclusive app and its visitor-friendly features. The app includes special features such as in-hall positioning and navigation and NFC-based visitor data collection, —and visitors may enjoy services like free in-venue Wi-Fi, visitors' badges embedded with RFID chips for complimentary and unlimited Taipei metro access.

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## SNAP, SNAP, SNAP!

Is a camera more than its megapixels? That really depends on who you're posing the question to. Over the years, we've witnessed significant advancements in digital imaging, recently being a full-frame sensor in a compact body, lightning-fast AF performance, 5-axis image stabilization, and the likes of ultra-fast image processors that are powering today's modern cameras.

Sure, more megapixels let you capture more details, giving you more room to crop and make large prints from the resulting image. But there is only so much the megapixel count can contribute to the image quality if the size of the sensor is unable to take full advantage of the high pixel count without affecting the details and graininess of the image. See the full story on page 51 ("Tech That Drives Photography").

That's right – this issue of HWM Malaysia is themed around photography. We have a 9-page special on CP+ 2015 to give you a rundown on what the Japanese camera makers have in store in the coming months.

We also put four of the top APS-C cameras to the test to determine which comes out on top on page 74 ("The APS to See"). As for aperture, we have the pleasure of working with the globe-trotting underwater photographer Kay-Burn Lim to demonstrate how you can use parallax effect to turn static photos into moving images.

Of course, we also have other non-photography content in the form of a NVIDIA GeForce GTX 960 shootout, as well as the top trends and highlights from MWC 2015 you can look forward to this year.

Happy reading!

*Michael Low*  
EDITOR

**Correction:** The distributor for the Belkin Micro-USB Cable with Lightning Connector Adapter mentioned in our subscription page (published February and March 2015) was incorrectly stated as Glocomp Systems Malaysia Sdn Bhd. It should be listed as Jardine OneSolution Sdn Bhd. – Ed.



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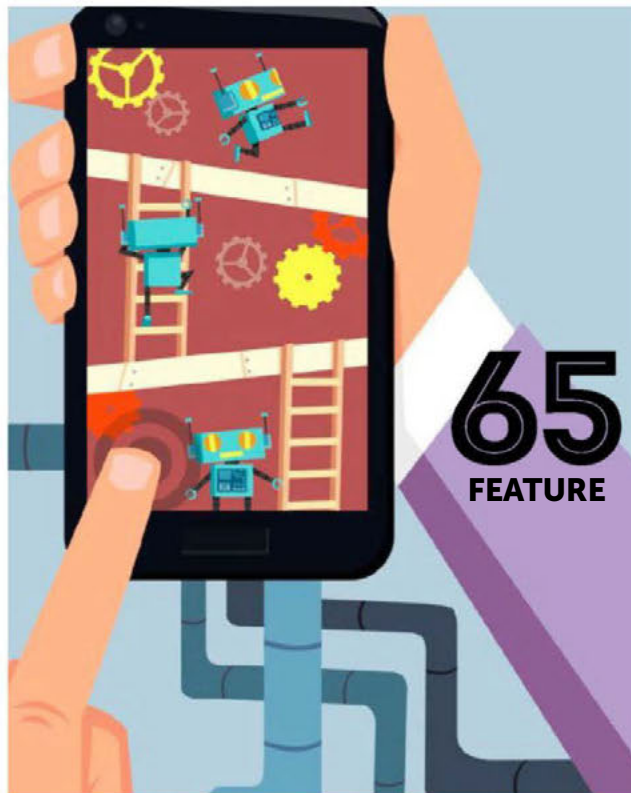
youtube.com/HardwareZoneMY



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# NEW THIS MONTH

Every month, we receive dozens of product announcements and mentions, sit through many a launch event and try out all kinds of devices. All these products are then carefully curated by our crack team of tech gurus. The final list is presented here in Gear and it is our hope you'll find something to geek-out to.



**MORE  
INSIDE>**  
**PHILIPS AT10**  
Portable all-in-one boombox.

**SONY XPERIA Z4 TABLET**  
Are you ready to be entertained?

**HTC ONE M9**  
The one you've been waiting for.

**IMPECCA BT KEYBOARD**  
When geeks pretend to go green.

## SAMSUNG GALAXY S6 AND S6 EDGE

Following in the footsteps of the GALAXY Note 4, the GALAXY S6 and its sibling, the GALAXY S6 edge, were announced during MWC 2015. Apart from the S6 edge's dual curved edge display, both GALAXY flagships are powered by identical hardware, which include Samsung's proprietary Exynos 7 Octa 7420 processor, 3GB of LPDDR4 RAM and support for LTE Cat 6, which allows them to achieve download speeds of up to 300Mbps.

Both will come in three internal storage options: 32GB, 64GB and 128GB.  
Samsung Careline 1 800 88 7799



## PHILIPS AT10

Adopting the retro charm of the classic radio is the Philips AT10, a wireless portable speaker that gives you the freedom to enjoy your music on the go. Its built-in rechargeable battery allows for up to 20 hours of continuous music playback or FM radio listening on a single charge. Music playback can be done wirelessly via Bluetooth or through the speaker's USB port, SD card slot or 3.5mm audio-in jack.

Woox Innovations 1 800 880 180





## SONY XPERIA Z4 TABLET

Announced at the MWC 2015 in Barcelona, the new Xperia Z4 Tablet is the latest iteration of Sony's tablet lineup. Slimmer, thinner and brighter, the tablet measures in at a thickness of just 6.1mm, weighs in at only 393g, and sports an all-new 10.1-inch, 2K (2,560 x 1,600 pixels) IPS display. It is also the first tablet to be using Qualcomm's latest 2.0GHz Snapdragon 810 octa-core SoC, along with 3GB of RAM and will be fitted with a 4G LTE antenna. At the time of launch, the tablet will be running Android's most recent 5.0 Lollipop OS.

Sony Mobile Communications Int'l AB  
(Malaysia) 1 800 88 7666

## IMPOSSIBLE INSTANT LAB UNIVERSAL

Turn your smartphone into an analog instant camera with the new and improved Impossible Instant Lab Universal. In other words, this device can convert any digital photo on your phone into a Polaroid-esque square instant photo via its brilliant touch location technology. This 'Universal' model is compatible with both iOS and Android devices, thanks to its new flatbed cradle and apps.

[www.the-impossible-project.com](http://www.the-impossible-project.com)





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65x  
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## PowerShot SX60 HS

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16.1  
MEGA  
PIXELS



New

18x  
OPTICAL  
ZOOM

20.2  
MEGA  
PIXELS

PowerShot  
SX610 HS

AVAILABLE COLORS:  



New

30x  
OPTICAL  
ZOOM

20.3  
MEGA  
PIXELS

PowerShot  
SX710 HS

AVAILABLE COLORS:  



New

40x  
OPTICAL  
ZOOM

20.0  
MEGA  
PIXELS

PowerShot  
SX410 IS

AVAILABLE COLORS: 



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OPTICAL  
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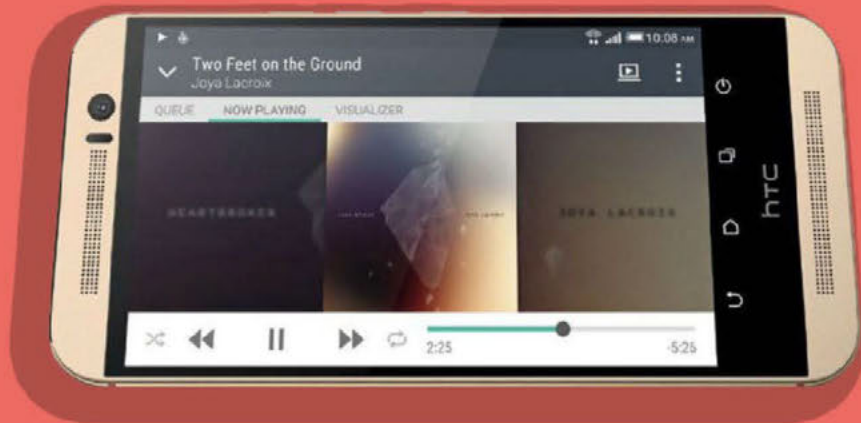
## HUAWEI TALKBAND B2

Unlike most wearable fitness trackers, the TalkBand B2 comes complete with a detachable face that allows it to double up as a Bluetooth headset. The headset features dual microphones, noise reduction, Bluetooth connectivity and a comprehensive 6-axis sensor to ensure that your fitness regime is picked up and recorded accurately. With regular use, you can expect the TalkBand B2 to last for up to five days on a single charge, or six hours if you intend to make continuous calls. Otherwise, it can lay dormant in standby mode for up to 12 days.

[consumer.huawei.com](http://consumer.huawei.com)



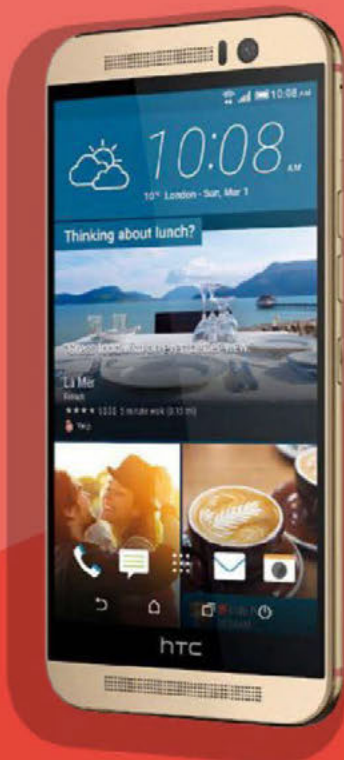


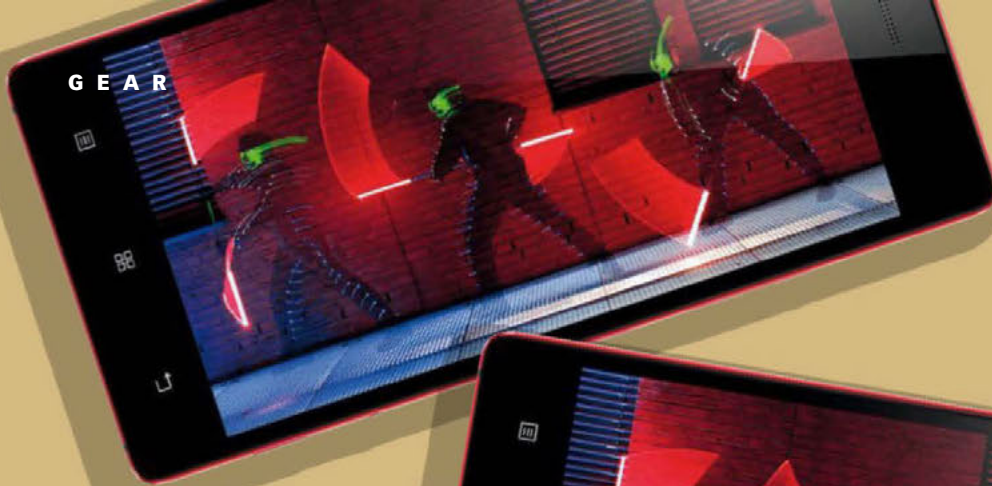


## HTC ONE M9

As one of the first mobile devices to be fitted with Qualcomm's latest Snapdragon 810 octa-core SoC, the HTC One M9 – like many products – was officially announced during MWC 2015. Fitted with a 5-inch Full HD display, 3GB of RAM, and the latest LTE Cat 6 network configuration, the One M9 also has a 20MP f/2.2 rear camera, while its famed UltraPixel camera now resides as the phone's primary front-facing camera. Other features also include 4K video recording, and its BoomSound front-facing speakers having been enhanced with Dolby Surround Audio technology.

HTC Customer Service Hotline 1 800 889 855



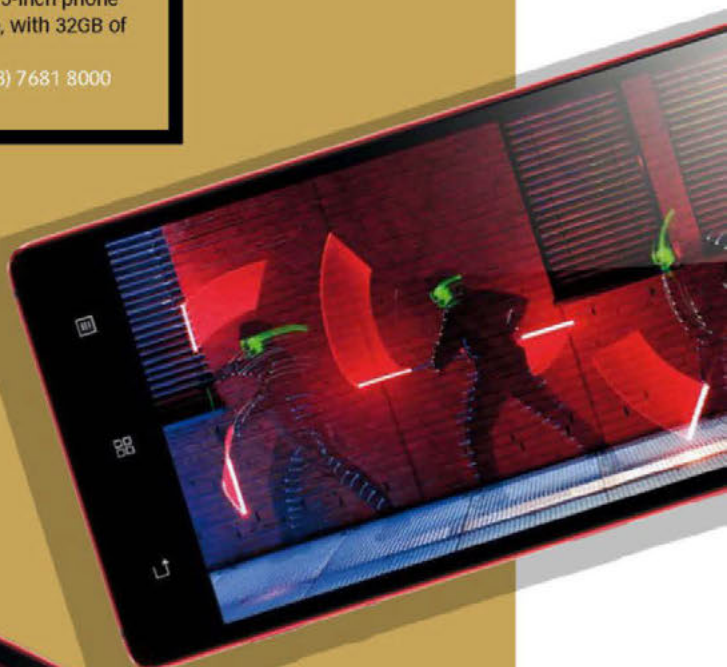


## LENOVO VIBE SHOT

Need a smartphone that offers capabilities that you might find on a point-and-shoot camera?

Lenovo has made it possible with the VIBE Shot. Sporting a sleek and versatile design, this smartphone comes packed with a 16MP camera, along with a shutter button and photo optimization features for both casual users and photography enthusiasts. The 5.5-inch phone also runs on Android 5.0 Lollipop, with 32GB of internal storage.

Lenovo Technology Sdn Bhd (03) 7681 8000





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## CANON MAXIFY MB5370

Canon's new MAXIFY printer series can be seen as a cross between its PIXMA and imageCLASS printers, driving performance in both print quality and speed. Leading the pack is the MB5370, a 4-in-1 multi-function inkjet with a host of business-oriented features, such as a 500-sheet paper input capacity, a single-pass, duplex ADF, and print speeds of up to 23ipm (B/W) and 15ipm (color).

Canon Marketing (M) Sdn Bhd 1 800 88 2000



## BOOSTCASE

The Boostcase combines a slim-fitting snap case providing lightweight everyday protection with a built-in 2,700mAh capacity power bank. Available for the iPhone 6 and iPhone 6 Plus sizes, the Boostcase is the perfect way to extend your battery life without adding (too much) extra bulk.

[www.boostcase.com](http://www.boostcase.com)



## IMPECCA BLUETOOTH BAMBOO KEYBOARD

Bring a touch of nature into the office with the Impecca Bluetooth Bamboo keyboard, a well-designed portable offering from Impecca that features a bamboo panel on the rear that automatically positions the keyboard in the ideal position for ergonomic comfort while typing.

[www.impeccausa.com](http://www.impeccausa.com)





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[lunasleep.com](http://lunasleep.com)



H W M S P E C I A L

# GAME CHANGER

The Olympus OM-D E-M5 Mark II's radically improved 5-axis image stabilization changes the game for both videos and stills



To find out more about Olympus OM-D EM5 Mark II, go to [www.olympusimage.com.my](http://www.olympusimage.com.my)



As a photographer, I've been looking for 'the one' for a while — a camera that performs like an extension of my mind that captures the world with the breadth of color and depth of texture as I see it in reality.

More and more, I'm also looking for portability, for a camera that won't wear me down as I walk through my travels, letting me turn one more corner or climb up one more ridge to see what's there. Now, it would also be great if this miracle camera were a capable video shooter, letting me capture either stills or movies as the scene sees fit.

It sounds like I may be asking for too much. And that's why the new Olympus OM-D E-M5 Mark II has me so excited.

## OM-D VIDEO: THE 'SECRET' IS IN THE 5-AXIS IMAGE STABILIZATION

Contrary to popular marketing, what most people need to shoot better-looking videos isn't more resolution. The one 'secret' that will make their videos instantly look better is simply that they need to shoot stable-looking videos.

Nothing makes a video look more amateurish — or more difficult to watch — than a shaky camera. Shooting at 4K with shaky hands doesn't help; it only makes people more aware of how dizzy your higher resolution makes them.

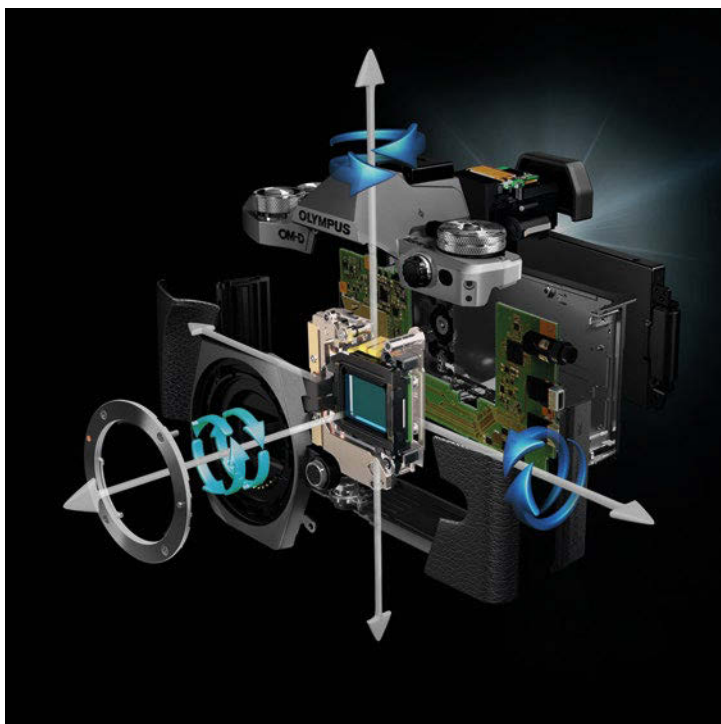
But to shoot 'professional' looking stabilized video is often difficult to do unless you carry a tripod with you and lock down the camera before every shot. Or you'll have to outfit the camera with fancy gear like handheld stabilizers, and that's more equipment you not only need to buy but also carry.

The E-M5 Mark II aims to solve this with its improved 5-axis image stabilization. The results are a revelation — and I don't use that

word lightly. Handheld video looks like it was shot on a tripod, with hardly a jitter in sight. Videos shot when walking are free from the bouncing and shaking that usually accompanies such shots, making the entire video look like it was captured with a stabilizer, when all I was doing was holding the camera with my bare hands.

The improvement is dramatic, especially when the E-M5 Mark II is tested against competing cameras with conventional image stabilizers. In those videos, camera movement is obvious, resulting in shaky, bouncing footage that will turn anyone off watching what you've shot.

I was also surprised how, just by being more stable, video from the E-M5 Mark II looked more cinematic, even without any post-processing done to it. With the 5-axis image stabilizer makes, now you don't have to be a professional to shoot professional-looking video.



The E-M5 Mark II's improved 5-axis IS can compensate for up to 5 stops.



**OLYMPUS E-M5 MARK II WITH  
5-AXIS IS**



**COMPETING CAMERA WITH  
IN-LENS IS**



It's difficult to show how video image stabilization works in still pictures, but hopefully this gives you an idea. These are zoomed-in screen-captures from videos I shot when walking towards the subject, compare how the E-M5 Mark II video's still frames are clearer and less blurry than a competing camera with in-lens stabilization.

## **AN ADVANCED HI RES SHOT MODE SHOOTS 40MP PICTURES**

On one hand, I'm glad to see that the megapixel wars are (mostly) over, and we've moved on to other important features like image stabilization and video performance.

On the other hand, I can appreciate the extra fidelity you get from higher megapixel cameras. The problem is, I don't want to shoot everything I see at 36MP or more.

Olympus has solved this conundrum in a unique way with the E-M5 Mark II, which shoots at 16MP natively, and can also shoot 40MP on demand.

It's enabled thanks to the new advanced 5-axis IS. The camera's Voice Coil Motor (VCM) is used to systematically shift the image sensor by half a pixel's width as it takes eight shots in sequence. Moiré and color aberrations are minimized, resulting in brilliant pictures with extraordinary color and detail.

To be sure, there are certain limitations — the camera needs to be locked down on a tripod to avoid minor hand movements creating image artifacts. The subject needs to be relatively still as well, because moving subjects will also cause image artifacts.

But it's a welcome tool in your pocket to have, when you come across the perfect landscape, architecture, product shot or still life, and want that much more detail in the final shot. With 16MP, I can print just shy of A3 at good quality, but with 40MP, I can print near A2 and still have a high quality print.



**Top: Shot with the 40MP mode.  
Right: A 100% crop of the 40MP shot.**

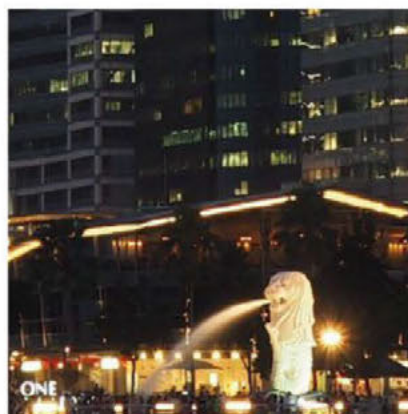


## 5-AXIS STABILITY'S NOT JUST FOR VIDEO

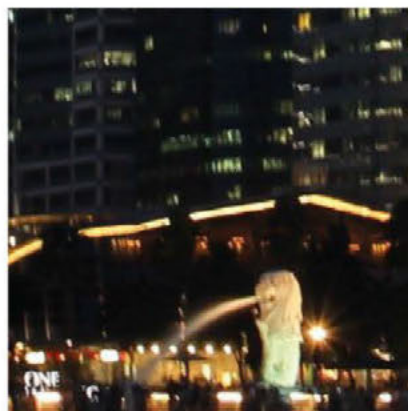
The E-M5 Mark II's improved 5-axis image stabilization doesn't just work with video, but is also remarkable for stills. This comes in handy when in shooting in low light without a tripod, as the camera needs to remain stable or else the shot ends up blurry.

Olympus' 5-axis IS is built into the camera, and can compensate for camera roll (which cannot be corrected with lens stabilization), horizontal and vertical shift, as well as for pitch and yaw.

Olympus says that it can compensate for up to 5 shutter steps, and I tried it for myself, shooting handheld in low light against a competing camera. Shooting handheld at a one second shutter speed, I got seven out of ten frames from the E-M5 Mark II tack sharp – something that should have been impossible to do normally without a tripod. Shooting with a competing camera, all but one of the ten frames at one second handheld were blurred beyond usable.



Olympus E-M5 Mark II with 5-axis IS, 1 second handheld



Competing camera with in-lens IS, 1 second handheld

## IT'S NOT OFTEN YOU GET TO BE FREE

It's not often you get to be free. To walk unencumbered, with light steps. To capture the world as you see it, and share it with others. To walk into any season, and know that you have the right tool to handle any situation.

The Olympus OM-D E-M5 Mark II makes me feel that way. To have a single camera for both high-quality stills, cinematic-quality video, and high-resolution pictures. All in a small, light package that manages to remain weather-resistant.

With a game-changing 5-axis image stabilization system that helps ensure I get stable stills and smooth-looking video, without having to carry bulky gear.

Best of all, as a Micro Four Thirds camera, the E-M5 Mark II enjoys a library of more than 50 different lenses from seven different brands, as well as a host of accessories. I can't wait to shoot with this one.



### AVAILABLE KITS

OM-D E-M5 Mark II Body

OM-D E-M5 Mark II with  
M. 12-50mm EZ

OM-D E-M5 Mark II with  
M. 14-150mm II

OM-D E-M5 Mark II with  
M. 12-40mm F2.8 PRO

Text by *Alvin Soon*



### Delivering Cutting-Edge Performance

You definitely won't be complaining about performance issues on the Samsung Galaxy S6. It features the company's latest and greatest chipset, the Exynos 7420, and also the world's first 14nm 64-bit mobile processor, consisting of four 2.1GHz Cortex-A57 and four 1.5GHz Cortex-A53 cores. Supporting it is a Mali-T760 MP8 GPU and a sizable 3GB of RAM.



### Effortlessly Capture the Most Beautiful of Photos

There is no need to be a professional photographer to take brilliant photos with the Galaxy S6. Both the front-facing 5MP camera and the rear-facing 16MP camera are equipped with a fast and bright f1.9 aperture, allowing you to take crystal clear photos even in low-light situations. Also helping you capture the perfect shot are features like Auto Real-time High Dynamic Range (HDR), Smart Optical Image Stabilization (OIS) and IR Detect White Balance. These three elements work in tandem to provide you with the best photos you could possibly take. In addition, the 'Quick Launch' feature allows you to fire up the camera app within 0.7 seconds upon double-tapping the Home button.

### Pixel-Perfect Display

The Galaxy S6 features a 5.1-inch QHD (1,440 x 2,560) Super AMOLED screen that boasts an eye-watering pixel density of 577ppi. This makes it one of the most, if not most, pixel-dense displays to be found on today's smartphones. The brighter 600cd/m<sup>2</sup> display of the Galaxy S6 removes the need for you to awkwardly shade the screen with your hand when viewing it under direct sunlight.





# SAMSUNG Galaxy S6 | S6 edge

NEXT IS NOW



## Living Life on the Edge

The Samsung Galaxy S6 edge is the world's first smartphone to feature a display that curves on both sides. With Corning's Gorilla Glass 4 – the toughest glass available on the market – you can be certain that the glass on the front and back of the Galaxy S6 edge will be able to withstand a beating. The beauty of the Galaxy S6 edge radiates off its physique as well, with its thinness of only 7.0mm and a weight of 132g.

## Fast Battery Charging

The Galaxy S6 edge is capable of charging itself up to 1.5 times faster than the Galaxy S5. This allows you to get approximately four hours of usage from a brisk 10-minute charge. If you find the use of wires too disorganized for your tastes, cut the cords and charge your S6 edge wirelessly. It comes embedded with wireless charging technology certified by the Wireless Power Consortium (WPC) and Power Matters Alliance (PMA). This makes the Galaxy S6 edge compatible with any wireless pads, as long as they support the established standards.



Black Sapphire

Blue Topaz  
(S6 only)

Gold Platinum

Green Emerald  
(S6 edge only)

White Pearl

## Timeless Beauty

Arriving with 32GB, 64GB and 128GB storage options, the Galaxy S6 edge is also available in an assortment of jewel tones: White Pearl, Black Sapphire, Gold Platinum, and Green Emerald. The metallic coating beneath its premium glass surface reveals a stunning hue as it reflects natural light – beautiful on the inside and out.

## Samsung Careline 1 800 88 7799

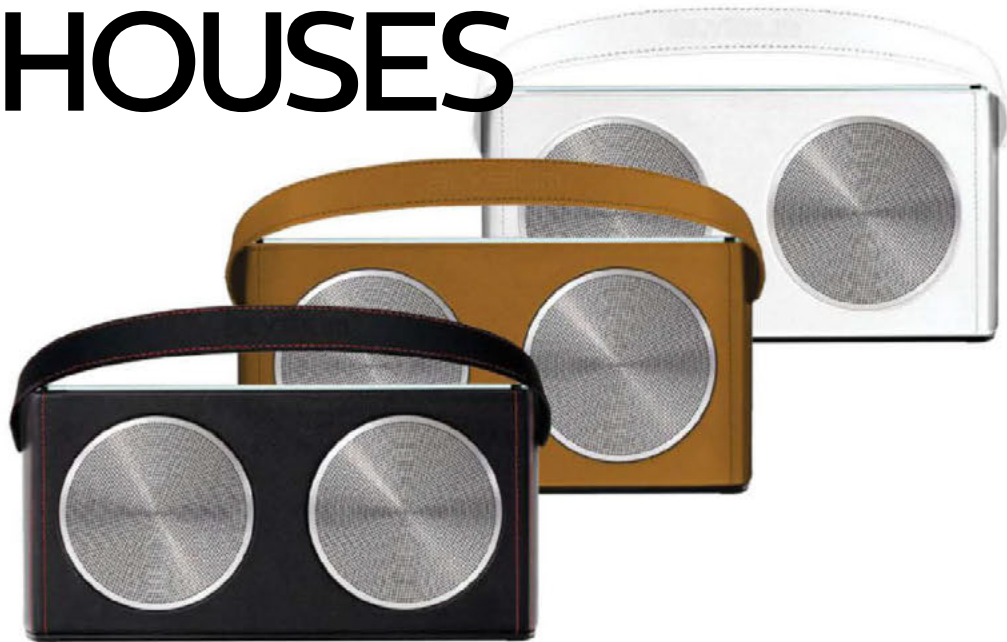
Samsung Malaysia Electronics (SME) Sdn. Bhd.  
(629186 D)

# PORTO-ABLE MUSIC POWERHOUSES

## ELYSIUM PORTO V

The Elysium Porto V is a portable wireless speaker that is able to produce commendable audio quality despite not having a subwoofer to work with. You can expect the Porto V to keep the smooth tunes playing throughout the longest of parties, thanks to its built-in rechargeable battery that allows for eight hours of continuous music playback. Don't worry if your phone runs out of juice while supplying the Porto V with music, as you will be able to recharge it right from the Porto V's own 5V USB port.

- Its classic, timeless design allows it to harmoniously blend into your life
- Finished in high-quality leather complete with quality stitching
- Convenient built-in 5V USB power port allows you to charge your mobile devices
- Auxiliary input allows you to initiate playback from an array of audio devices
- Equipped with two 10W speakers



## ELYSIUM PORTO VII

What separates the Porto VII from the typical fare of the portable speakers is its ability to deliver a wholesome three-dimensional soundstage. This is made possible through its patented Dirac HD Sound software technology that analyzes and corrects for audio correlation. As a result, the Porto VII is able to produce stellar quality audio complete with a convincing soundstage – making it the perfect companion for your movies and music.

- Powered by Dirac HD Sound technology to deliver a three-dimensional soundstage
- Embedded USB port allows you to play your music directly from a USB drive
- Supports Bluetooth 4.0 and Near Field Communication (NFC)
- Built-in rechargeable battery allows for 8 hours of continuous music playback
- Equipped with two 5W speakers and one 20W subwoofer

## ELYSIUM PORTO XI

It's not an exaggeration to say that people often associate portable speakers with their tinny sounds and lackluster bass. The Porto XI intends to change that demeaning perception by showcasing its ability to produce a perfectly dignified sound signature. With its two 6W speakers and a booming 22W subwoofer, you can rest assured that the sound quality emitted by the Porto XI is as substantial as it can possibly be. There is also no need to clumsily fiddle about for its controls when the lights are out, as they will be illuminated for your convenience.

- Produces a respectable total power output of 34W
- Illuminated touch panel allows your music experience to carry on even in the dark
- Its two full-range drivers and one bass driver is capable of delivering a full-bodied audio experience
- No need to fuss about with wires by streaming your music via Bluetooth 4.0 or NFC
- Equipped with two 6W speakers and one 22W subwoofer





# HUAWEI *Mate 7*

Live once. Live life



Dual Sim      Dual 4G      3 GB RAM  
Dual Standby      32 GB ROM



**1**

**1 Second to  
Activate**

**5**

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Recognition**

**360°**

**Multi Angle  
Decryption**



With the most advance technology, Huawei Mate 7 is equipped with a highly secure fingerprint sensor.

**Experience it Now**

*"Goodbye password, hello single touch"*



## HUAWEI WATCH

Huawei is poised to make serious waves with its first smartwatch, the Huawei Watch. On its perfectly circular face is a sapphire crystal lens that houses a 1.4-inch touch-sensitive AMOLED display with an impressive 400 x 400 resolution and a 10,000:1 contrast ratio. Hardware-wise, the smartwatch is powered by a Qualcomm 1.2GHz processor and features 4GB of storage and 512MB of RAM. Other noteworthy features include a cold-forged stainless steel frame, a built-in heart rate monitor, as well as 6-axis motion sensors.

[consumer.huawei.com](http://consumer.huawei.com)



## MISFIT BOLT

The Misfit Bolt is a smartphone-controlled, color-changing bulb that works without a control hub. Its accompanying smartphone app is free and it allows you to download Scenes that cycle the bulb through a set of color patterns. If you are feeling creative, you can even create your own Scene!

[www.misfit.com](http://www.misfit.com)



## MICROSOFT LUMIA 640 XL

The new Lumia 640 XL is the latest midrange Windows Phone 8.1 device to come out of Microsoft's mobile division. It features a 5.7-inch 720p HD display that has a pixel density of 259ppi, and is powered by 1.2GHz Qualcomm Snapdragon 400 processor and 1GB RAM. More importantly, it is also Windows 10 ready.

Microsoft (Malaysia) Sdn Bhd (03) 2179 6838

## SONY XPERIA M4 AQUA

The Xperia M4 Aqua may be a far cry from its metal and glass Xperia Z cousins, but this midrange Xperia still sports Sony's OmniBalance design in a plastic frame, and packs a punch with a 2.5Ghz Qualcomm Snapdragon 615 processor and 2GB RAM. As with all Xperia device, it is also water- and dust-resistant.

Sony Mobile Communications Int'l AB (Malaysia)  
1 800 88 7666





## LENOVO TAB 2 A10-70

Part of Lenovo's new tablet lineup, the Tab 2 A10-70 is built for entertainment as it sports Dolby Atmos 3D sound technology, which aims to deliver an immersive audio experience. As the name suggests, the tablet comes equipped with a 10.1-inch Full HD display and is powered by a quad-core Mediatek SoC. On top of having 16GB of built-in storage, 8MP rear and 5MP front camera, this tablet runs on Android 4.4 KitKat, which is also upgradeable to Lollipop later.

Lenovo Technology Sdn Bhd (03) 7681 8000



## HUAWEI MEDIAPAD X2

The MediaPad X2 is the world's slimmest 7-inch phablet, and rightfully so thanks to its thinness of only 7.28mm. It has a 7-inch HD (1,200 x 1,920) IPS screen that boasts a pixel density of 323ppi, and powering it is a 64-bit 2.0GHz Kirin 930 octa-core CPU and a 64-bit Mali-T628 GPU. Other features of the MediaPad X2 include a 13MP rear camera, a 5MP front camera and a massive 5,000mAh Li-polymer battery.

consumer.huawei.com



## HTC RE VIVE

From the smartphone's industry to something that's wholly unexpected from HTC, the RE Vive VR headset combines Valve's technology know-how with HTC's design language to offer what the company deems as a 'Full Room Scale 360 Degree Solution with Track Controllers'. Powered by two 1,200 x 1,080 displays, the headset will not only enable users to explore from every angle, but also interact with the virtual surroundings using the accompanying wireless VR controllers. HTC promises the ability to handle 90 FPS video and incredible audio fidelity.

HTC Customer Service Hotline 1 300 22 3322



## LG WATCH URBANE LTE

Considered the most ambitious watch by LG to date, the smartwatch is equipped with a 1.3-inch Plastic OLED display and is powered by a 1.2GHz Qualcomm Snapdragon 400 processor. It is also IP67 rated, making it a water- and dust-resistant device.

LG Customer Service Centre 1 800 82 2822

### MONTBLANC EXTREME AND SOFT GRAIN LEATHER COVERS

If the exquisite design of the Samsung GALAXY S6 or the S6 edge is not posh enough for your tastes, you can always take it to the next level by fitting it with Montblanc's new lineup of luxury leather covers. GALAXY S6 users can choose to deck their device with a flip or hard shell cover made of durable extreme leather or soft grain leather, while GALAXY S6 edge users can have their flip or hard shell cover made of extreme leather.

[www.montblanc.com](http://www.montblanc.com)



### OTTERBOX SYMMETRY LIMITED EDITION FOR IPHONE 6

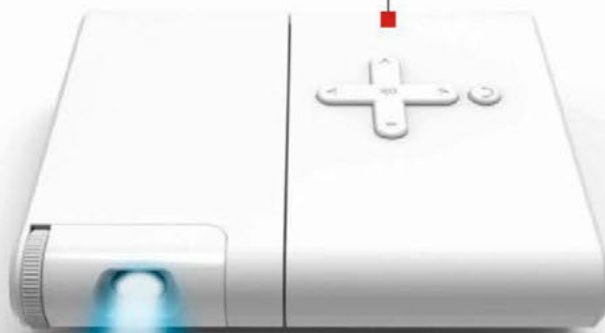
If you want to provide your iPhone 6 with the best possible protection without affecting its style, look no further than the OtterBox Symmetry Limited Edition casing. This military-rated case features a soft rubber core that is further strengthened by a polycarbonate outer shell to guarantee your iPhone 6's safety even from the most worrying of mishaps.

📞 KWS Distribution Sdn Bhd 1 700 816 992

### LENOVO POCKET PROJECTOR

Lenovo's Pocket Projector is set to disprove the stereotype of projectors always being huge and chunky pieces of machinery. With an unassuming weight of 170g and a physique that is about the size of a smartphone, the Pocket Projector is purpose-made to be carried around with you in your pocket. It sports a bright 50-lumen lens with Vibrant Color technology and a high-contrast optical engine that prevents image distortion.

[www.lenovo.com](http://www.lenovo.com)



### HTC RE GRIP

Get lean and fit with HTC's first wearable device – the RE Grip. It's also the first Android wearable device to be powered by the Under Armour Record System. With a matte black finish, colorful interior and curved display, this smartwatch features five tracking sensors that will record users' running route, distance, pace and the amount of calories burnt. Its battery life can also last up to five hours with GPS enabled.

📞 HTC Customer Service Hotline 1 300 22 3322



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\* See product packaging and [www.sandisk.com](http://www.sandisk.com) for additional detail.

<sup>1</sup> Up to 240MB/s write speed to drive; write up to 60 times faster than standard USB 2.0 drives (4MB/s); up to 260MB/s read speed. USB 3.0 port required. Based on internal testing; performance may be lower depending upon host device. 1MB=1,000,000 bytes.

<sup>2</sup> Based on a 12GB MPEG-4 video transfer to drive from host device with USB 3.0 port. Video support and results may vary based on host device, file attributes and other factors. Standard USB 2.0 drives (4MB/s).

<sup>3</sup> Based on transfer of 1000 photos (3.6GB) to drive from host device with USB 3.0 port. Average size photo is approx. 3.6MB. Performance may vary based on host device.

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### CC308+ MULTI-DETECTOR

Feeling paranoid? Think you're under surveillance? Well, there's now a device to ease your worries. Fully covered in a black plastic chassis, the CC308+ Multi-Detector relies on active laser scanning and passive wireless method to detect RF signals that may be emitting from eavesdropping devices, such as wireless pinhole cameras, or telephone wiretapping.

Engtong Systems Sdn Bhd (03) 6143 5999

### TEAM C151

Team Group's thumbnail-sized USB 2.0 flash drive comes with five storage options: 4GB, 8GB, 16GB, 32GB and 64GB. Each of the different storage capacities comes with its own unique color. You won't have to worry about the C151's welfare for it is both dustproof and waterproof. A strap hole allows for a strap to be attached onto the cap of the C151 to prevent any accidental misplacing.

M-Link System (M) Sdn Bhd (03) 6143 0888



### SONIC GEAR QUATRO V

This USB-powered 2.1 speaker is capable of delivering crystal clear audio with its dual bass reflex panel, encased in two optional colored plastic chassis. Apart from being a speaker system, the Quatro V also functions as a radio and standalone speaker, as it is equipped with microSD card slot and USB 2.0 port. Users can also control playback wirelessly and switch to the different modes via the provided remote control.

Leapfrog Distribution Sdn Bhd (03) 7803 6703

### SONY XPERIA E4 DUAL

Thanks to dual-SIM functionality, one would no longer need to put up with the hassle that comes with managing two separate phones concurrently. The Xperia E4 Dual features a 5-inch qHD (960 x 540) IPS display, a 1.3GHz ARM Cortex-A7 quad-core processor, an ARM Mali-400 MP2 GPU, 8GB of internal memory (expandable to 32GB via microSD), 1GB of RAM, a 5MP rear camera and a generous 2,300mAh battery that provides at least two days worth of battery life.

Sony Mobile Communications Int'l AB (Malaysia)  
1 800 88 7666



### VINNFIER ULTRA 3 CRU

The latest addition to Vinnfier's Ultra speaker series is the Ultra 3 CRU, which features a pair of 3-inch full-range speakers and a 5-inch bass driver that are optimized for gaming, movies and music. They ensure an immersive audio experience, regardless of the audio source. Apart from direct audio playback from the 3.5mm jack, users can also enjoy music playback via its USB port and SD card slot.

Vinnpower Distribution Sdn Bhd (03) 7772 9218



### PRYNT

This case basically turns your smartphone into an instant camera. But, there's more, you can have your photos come to life with an augmented reality function. A short video clip is shot prior to the picture being taken and can be viewed when you scan the printed photo through the Prynt app.

[www.pryntcases.com](http://www.pryntcases.com)



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**FEATURES  
QUATRO V :**



[WWW.MYSONICGEAR.COM](http://WWW.MYSONICGEAR.COM)

### TP-LINK NC220

With its mechanical ICR and infrared LEDs, the TP-Link NC220 IP camera is able to pick out home intruders even if they are lurking in pitch black darkness. Instant notifications will be delivered via email upon the camera picking up sounds or movement, allowing you to spend more time out and about, and less time intently watching the IP camera's live stream. You can expect the NC220 to deliver fluid video streams at high frame rates, thanks to the use of H.264 video compression. The NC220 can also be used as a wireless network range extender, allowing for wireless data transfer rates of up to 300Mbps.

TP-Link Distribution Malaysia Sdn Bhd  
(03) 8964 1922

AdvanceNet Technology Sdn Bhd (03) 8070 3633

Lab Seven (M) Sdn Bhd (03) 8075 8811



### ZOTAC STEAM MACHINE SN970

ZOTAC's SN970 is a Steam Machine, which the company made in preparation for the launch of SteamOS. Slim, compact and easy to carry, the SN970 is fitted with a 6th generation Intel processor, NVIDIA's GeForce GTX 970M discrete graphics with 3GB of GDDR5 VRAM, 8GB of DDR3 memory, and a 64GB M.2 SSD with a 2.5-inch 1TB HDD for storage.

Cyntrix Technologies (03) 5880 5552



### KINGSTON HYPERX FURY DDR4

Designed for Intel's X99 chipset, the HyperX FURY DDR4 kits are Kingston's first DDR4 memory modules to feature automatic OC via plug-and-play, along with CAS latency of 14 and 15. Its low-profile heat spreader design ensures excellent thermal dissipation, while the DDR4 modules run at 1.2V even at 2,666MHz. Available in various configurations from 8GB to 64GB.

Amble Action Sdn Bhd (03) 7968 6899

Convergent Distribution (M) Sdn Bhd  
(03) 2144 1881

Ingram Micro Malaysia Sdn Bhd  
(03) 7952 8188



### IMATION LINK POWER DRIVE

What separates the LINK Power Drive from the usual fare of power banks is its ability to also function as an external hard drive for your iPhone or iPod touch. The LINK Power Drive allows you to expand your phone's storage capacity, back up data, and even stream content that you have stored onto the drive itself. To access the drive, you'll need to download the free LINK app on the Apple App Store. The LINK Power Drive sports a 3,000mAh rechargeable Li-polymer battery and is available in three sizes: 16GB, 32GB and 64GB.

Digital Paper Sdn Bhd (03) 5569 2002



## SMARTER COFFEE

Touted as the world's first Wi-Fi enabled coffee machine, the Smarter Coffee lets you wake up to a perfectly-brewed cup of coffee every morning. Using its iOS or Android app, you can configure Smarter Coffee to decant its brew as it wakes you up. If you aren't an early bird, instruct Smart Coffee to whip up an evening pick-me-up as you make your way home from work!

[smarter.am](http://smarter.am)



## MEGA DRIVE MEGATRON

Combining the two greatest things in the universe, a Sega Mega Drive and Megatron, is genius! Fully transformable, this action figure even comes with the old school controller with the ABC buttons (instead of the later six buttoned ones) and a miniature Sonic 2 cart! The only downside? It's not an actual functional Mega Drive console. Oh, there's also a PlayStation Optimus Prime coming next year.

[www.takaratomy-arts.co.jp](http://www.takaratomy-arts.co.jp)



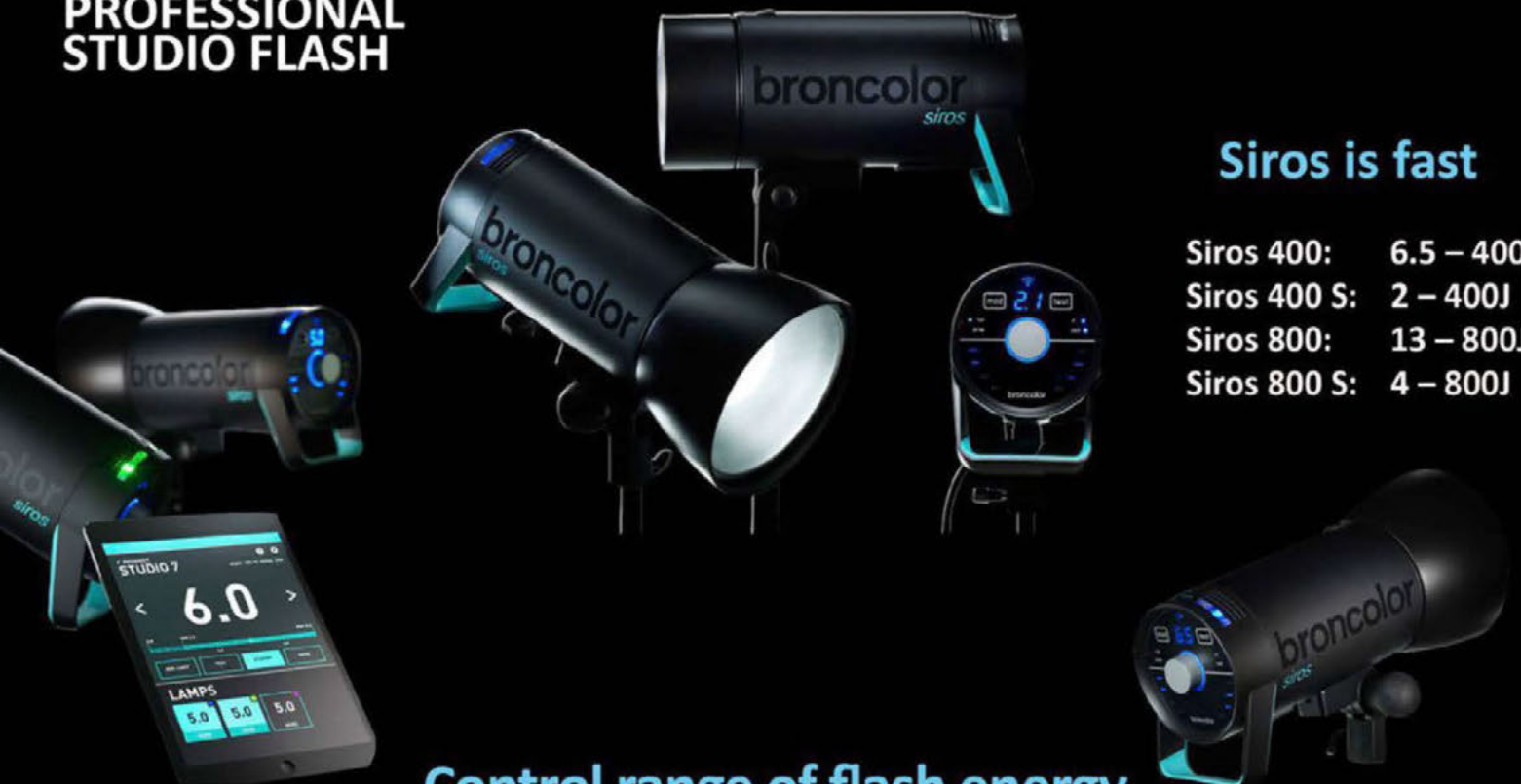
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Join renowned photographer S.C. Shekar for a walking workshop around Empire Damansara to learn the intricate art of candid street photography, including composition and the technical know-how to capture the architecture and cafes in the best light.



Renowned for his portraiture, architecture and ethnographic work, Malaysian-based S.C. Shekar began his career as a photojournalist in the early 80's with The Star publication. Over the years, his photographic series – a number of which revolved around South East Asia – have been published in many international publications and exhibited in numerous galleries.

**ONLY 30 SPOTS!**

To sign up, simply email your particulars to [contest@bluinc.com.my](mailto:contest@bluinc.com.my) with the subject ("HWM & FUJIFILM – Street Photography Workshop"). Hurry though, as the session is limited to 30 people!

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## THE ART OF MOVING

Just how is a smartwatch different from an activity tracker and why can't one device do it all? Daniel Tan, Managing Director, Asia at Jawbone tells us.

ILLUSTRATION JAMES TAN



# THERE'S AN 'UBER' FOR THAT

Smartwatches have been dubbed as the next big thing in technology, but the truth is we have seen very little innovation on that front.

by James Lu

Despite harsh criticism over some of its business practices, app-enabled taxi service, Uber, was recently valued at a staggering US\$40 billion. In fact, Uber's overwhelming success has almost single-handedly created an entire new industry model, one where individuals can make their services instantly available to anyone with a smartphone. There's now practically an 'Uber' for everything, from maid services, dog walking, and babysitting to portable ATMs, on-site bicycle repair, and even an Uber-like app for hiring someone's private jet – pilot included, of course.

But can these apps repeat Uber's success? Just what makes Uber so successful? If you've ever taken an Uber ride, you'll know that it's generally not cheaper than a regular taxi. But while it may not cost you less money, it is convenient, and in this respect it buys us time and save us effort, the two other costs associated with every transaction. Uber passengers simply tap their smartphone screen and a few minutes later, a taxi magically appears. The app tells you in advance roughly how much the fare will be - so you don't need to worry about shady drivers taking roundabout routes - and all payments are automatically handled through the app so you don't even need to carry cash or a credit card with you. By reducing time and effort costs, Uber is able to deliver better value to the passenger – all without ever actually

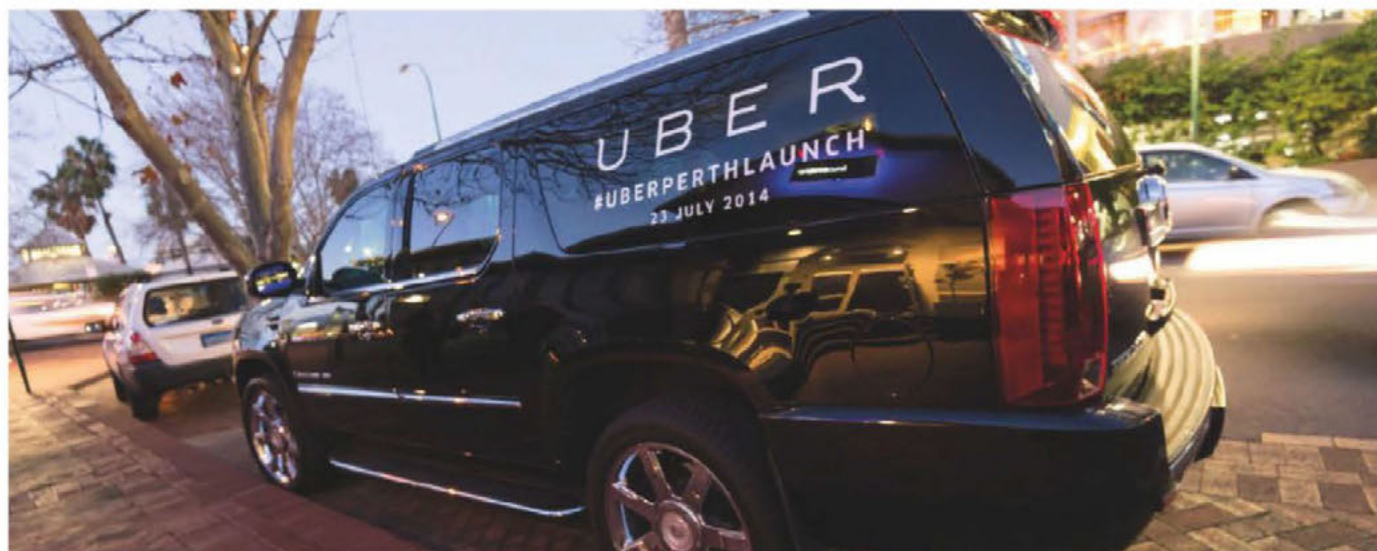


reducing the price.

But what makes Uber truly successful is how convenient it makes it to be a driver. After all, if Uber couldn't meet demand with enough supply, it wouldn't work. Essentially, Uber lets anyone be their own boss, all you need is a car and some spare time. Uber gives its drivers access to a huge pool of potential customers, the kind of pool that was previously only accessible by working for a larger company. It also handles all core operations like payments and scheduling, letting its drivers sidestep the startup costs that are usually associated with being your own boss. Being an Uber driver is a convenient way to make extra money: there are no sunken costs (assuming you already own a car) and no ongoing costs other than the cost of petrol. Neither the passenger nor the driver pays Uber any subscription fees or other charges. How does Uber make money? It takes a percentage of each fare (around 20 percent depending on the type of car).

When you look at Uber, you shouldn't see it as a taxi app, but a blueprint for how technology can be used to build a business based solely around a core under-exploited need: convenience. And that's what every Uber-like app is trying to achieve. In the age of Internet and smartphones where instant gratification is everything, convenience, for both customer and supplier is more important than ever.

*"If you've ever taken an Uber ride, you'll know that it's generally not cheaper than a regular taxi. But while it may not cost you less money, it is convenient, and in this respect it buys us time and save us effort, the two other costs associated with every transaction."*



PICTURES: UBER



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TECHNOLOGY





# LOYALTY THROUGH ECOSYSTEM

Android's diversity is great for users but not for companies looking to retain them.

by Zachary Chan

■ Apps have since taken centerstage in the war of mobile platforms. It's been Apple iOS vs. Google Android for a few years now, with other players like Microsoft's renewed Windows Phone creeping up from behind and even the Amazon Appstore, depending on where you live. According to a recent January 2015 report from appFigures.com, a mobile apps reporting platform, Google's Play Store growth in 2014 finally surpassed Apple's App Store. As a platform, that's a win for Android. However, Android hardware manufacturers are still at a disadvantage compared to iOS for the very fact that they are still competing with each other.

So what do you do if you're a hardware manufacturer relying on a largely homogeneous and open operating system? You can start customizing said OS so that on the surface, it looks and feels different from your competitors. For a while, this strategy worked, but after a few generations, mobile devices began to suffer from the same problems notebooks often do: bloatware. Manufacturer programs and features that nobody really needs, forced upon the consumer in the name of uniqueness. At best, they are a distraction you can live with. At worse, they bog down the device, hogging precious resources and storage space.

And like the notebook industry, smartphone manufacturers have realized that simply differentiating themselves—be it through hardware or software—wasn't enough to establish or retain brand loyalty. They were just fueling a culture of one-upmanship where users would just jump from device to device, brand to brand, depending on the flavor of the month.

Just like how Apple or even Microsoft users inherently benefit from their closed ecosystem, Android manufacturers need a similar software ecosystem that isn't just exclusive to their hardware, but also complementary towards user experience.

For starters, they've realized the bloatware problem. And if one were to look at the recent announcements at this year's Mobile World Congress, most manufacturers are starting to trim down their custom

**"Android hardware manufacturers are still at a disadvantage over iOS simply because they are competing with one another."**

User Interfaces. Samsung's flagship devices were arguably one of the latest offenders when it came to bloatware, but with the GALAXY S6 and S6 edge, Samsung's TouchWiz interface has become ultra slim, with only three essential tools pre-installed and the rest offered as options only if a user actually chooses to install them.

Now, this still doesn't solve the problem of building loyalty in a sea of Android devices. For that, we chanced upon a meet up with Nicholas Wodtke, Vice President of Samsung's Media Solutions Centre, Southeast Asia and Oceania during the Samsung SEA Forum in February. The Media Solutions Centre works towards creating products specifically targeted for

Samsung users down to geographical preferences, "How Malaysians and Singaporeans consume music is different from how Indonesians or Australians consume music," explains Wodtke. "We build loyalty for Samsung. We want consumers who have their contracts up, to walk into their telco and already have their mind made up that they are a Samsung user and they want the next Samsung device."

Ultimately, Samsung understands the need to have an inclusive suite of software that works across their products, so you can watch a movie on your phone and have it streamed to your Samsung TV when you step into the living room. Loyalty and

rewards programs such as GALAXY Life are designed to build an inclusive community. Samsung is also working on a gaming platform called Circo, where users earn points playing their favorite games on their Samsung device to redeem for real-world benefits. According to Wodtke, GALAXY Life was downloaded three million times in 2014, and Samsung saw about 70% returning users, which meant people actually found the rewards enticing enough. This year, Samsung expects a three-fold increase in users, and looking to roll out a new Gold-tier VIP treatment for flagship device owners.

Samsung isn't the only manufacturer that has come to realize this. Sony has been evangelizing Remote Play between PlayStation and Xperia devices and HTC's most recent collaboration with Valve shows there is a clear need for brands to go beyond selling individual devices.



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Type	DDR4-2666	DDR4-2800	DDR4-3000	DDR4-3200	DDR4-3400
Pin	288	288	288	288	288
CAS Latency	CL=13	CL=14	CL=15	CL=16	CL=16
Bandwidth	21.3GB/s	22.4GB/s	24.0GB/s	25.6GB/s	27.2GB/s
Data Rate	2666MT/s	2800MT/s	3000MT/s	3200MT/s	3400MT/s
Voltage (VDD)	1.2V / 1.35V				
Capacity	• 4GB x 2pcs • 4GB x 4pcs • 8GB x 2pcs • 8GB x 4pcs				

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“

Image quality  
is not just from  
resolution.

”



# Breaking away from the trend

YOSHIYUKI NADA  
MANAGER, OVERSEAS SALES AND MARKETING  
DEPARTMENT, MARKETING DIVISION,  
OLYMPUS IMAGING CORP.

by Marcus Wong

## Besides resolution, what are consumers searching for in their cameras these days?

There are various customers and requirements are very different for every customer. Still, some customers are chasing pixel count. But we think that most customers are satisfied with the current level of resolution, considering their usage. And some are starting to recognize that better lenses gives better resolution; not pixel count. Nowadays, cameras have high resolution so it does not make sense that an image has blurring from handshake.

Generally speaking, customers require images with no handshake. Especially step-up customers coming from handphones and compacts. They also want quicker response from their cameras – not only from the camera bodies, but also from the autofocus systems on the lenses; a smaller, lighter system overall.

## With that in mind, what is Olympus' main focus when coming up with new cameras?

We will continue to focus on solutions for getting excellent image quality to our customers "any time", "anywhere". This means improving product environmental resistance like water-proofing, shock-proofing and so forth.

Video is getting more important for the industry in general, but still images remain our main focus. This is because to show a movie, you need a high-spec PC as editing is a must, but very few customers have the resources to edit video, nor the interest to spend long hours doing so.

## What would you say are the biggest challenges facing the camera industry?

Well, as you know, the market size is shrinking, especially for point-and-shoot

cameras. Shipments are down about 30% according to CIPA. Many customers are using their smartphones more for photography, so for digital compact cameras we require something unique and special to stand out. Therefore, we focused on our high-end models, long-range zoom models and also Tough models, which smartphones can't replicate. Some smartphones are supposed to be water resistant, but the truth is that nobody likes to leave their smartphones underwater!

## On that note, do you think other camera companies will follow Kodak's lead and create a camera smartphone?

I don't think so. Camera manufacturers won't launch mobile devices themselves, but there's a possibility they'll provide imaging components, sensors or focus on co-operation with smartphone makers to tie-in some features linking the mobile to our cameras so that they become more convenient to use. For example, send images via smartphone; but capture by camera. The imaging capabilities should stay on the cameras themselves, otherwise, smartphones would have to become bigger, like what cameras are today!

## Competitors are boasting ISO 409,600, but Micro Four Thirds maxes out at ISO 25,600. What's a practical sensitivity limit?

You're right that at the moment the maximum ISO sensitivity is 25,600, but I think it is a reasonable point, considering the current technology. But it will be increased because it's not only a sensor issue, but a processor issue as well. We can't say how much it will be improved, but it should be improved in the future.

What most people don't realize is that it is not just the ISO sensitivity of the sensor, but also the processing load from a higher pixel count that creates heat and hence noise, compromising the image quality. If for example, we make an 8-megapixel sensor using today's designs, I'm sure we could get a camera with excellent high ISO capabilities.

But I think it is not a good way to make competition - in specs alone. Even in current level of high ISO, image quality should be improved. That is more important.

## Is there an optimum resolution for a Micro Four Thirds sized sensor?

That's a difficult question to answer. I think it's not good to fix a number because that also depends a lot on the lens performance. At the moment, we would say that 16-megapixels is a good point for us, but all things relate to the technology in use, and that includes lenses both current and future.

There are lenses that we have designed that should give better resolution, but we can't produce because of the limitations of current technology, so such issues still remain. Image quality is not just from resolution; there are many aspects, for example, more dynamic range and better color reproduction.

## Finally, what would your ideal camera be like?

Personally, I think my ideal camera would have less buttons but be more customizable. I'd like it to have quick and accurate autofocus and fast response, and of course the body design should follow the older OM series – they're very beautiful, solid and sharp.



**At Jawbone, we focus on three things – beautifully designed hardware, incredible software and cutting-edge data science.**





# The art of moving

DANIEL TAN  
MANAGING DIRECTOR,  
ASIA  
JAWBONE

by Zachary Chan

**The race to put smart devices on the wrist of the consumer is heating up. What is your take on this trend and where does Jawbone plan to take things next?**

The market for lifestyle and health wearables is extremely fast growing. We find that universally people want to live better, while that may mean different things to different people. Smart wearable devices, like the UP by Jawbone family, are really giving people that opportunity to learn more about themselves to improve upon that.

Without sharing details on our future roadmap (as we keep this information confidential), you can expect to see four things: 1) The UP platform and hardware continuing to grow globally; 2) Multi-sensor devices that take the sector to another level; 3) The extension of our software platform across many more devices (Apple Health / Android Wear); 4) The explosion of partner platforms as we continue to make the 'Internet of You' a reality.

**Do you see a point of convergence between smartwatches, trackers and other wearables, or will they remain separate?**

The market is evolving in phases. Phase one was delivering steps and sleep. And getting people used to actually wearing these devices. We are now entering phase two, which is about seeing more data, tracking more, but in a form factor that people will actually wear day and night.

Let's be honest. Nobody is really delivering on phase two. Most multi-sensor devices are simply too big to be worn 24/7. So we believe a clear dividing line has emerged: on one side are the 'phone on your wrists' wearables – distracting notifications, large, battery-guzzling displays and sensors.

On the other side, we (Jawbone) take a different approach. We create small, fashionable devices not because we want to win awards - but because it is the best way to get someone to wear something day and night. Size does matter.

If a person is serious about total health - they'll wear one of our trackers. If they just want notifications - they'll get a smartwatch. And some people will wear both. The wearable solves different user needs - depending on what the person is most interested in.

**Are the sensors we see today as good as they're going to get?**

Jawbone is one of the most accurate trackers on the market using sophisticated technology. The UP and UP24 bands and UP Move have an accelerometer in them to observe steps taken. We partnered with FullPower using the MotionX engine, which very accurately interprets that movement from the accelerometer mapped to the biomechanics of human motion to give UP wearers an accurate calculation of steps. And bringing in more signals through multi-sensor devices will allow us to refine accuracy even further.

**Here's a common lament about activity trackers. "I'm not an active/sporty person by nature. A fancy bracelet isn't going to suddenly get me to eat or exercise properly." How do you respond to this?**

At the end of the day, what people care about is "how does this all affect my life?" The narrative of the UP system is track, understand and act to help people live better. We have helped people live better by combining hardware, software and data.

With the hardware, we have the track part down – that's turnkey with the band being something people actually want to wear to passively track their data. However, tracking by itself is not enough, if you only provide a solution that tracks, people will lose interest over time and become disengaged; this is what we have seen with other products in the market, and this is how the UP system is different.

Our job is to help people make sense of the data – to help them understand it and understand what to do with it. We've had this saying that "Data is good, but understanding is better". What we've been focusing on is how to use UP data to drive understanding, and eventually drive people to act (behavior change). We're the only one doing this – it's what sets us foundationally apart from others in the space.

People love that our Insights help them live better lives, and the hardware that collects this data has to be equally beautiful and integrated into their lives.



# DQN: A PRECURSOR TO A.I.?

by Salehuddin Husin

**A.I.** or Artificial Intelligence is ubiquitous in sci-fi. Cortana from the Halo series of games, HAL 3000 from 2001: A Space Odyssey and J.A.R.V.I.S. from Iron Man all feature self-thinking machines in core roles. While reality still has a long way to go to catch up to sci-fi, Google's DQN algorithm is definitely a step in the right direction. It can't think for itself, but it can learn without external input.

Currently, the algorithm can play a handful of Atari games, in some cases, play them even better than the average player. What's impressive is that the program has no idea what the goal of each game is. It basically has to learn from scratch what it needs to do to get a desirable outcome (in this case a high score), and then take steps to ensure that comes to pass. While it learns and adapts through trial and error, things are a lot more complex under the hood.

DQN uses a complex artificial neural network to do what it does, which isn't all that different from how a human mind works. It may seem a rudimentary thing, but this is just the beginning of Google's foray into artificial intelligence, though the company won't exactly label DQN as an A.I. Instead, Google calls their program an Artificial Agent as they feel true artificial intelligence (or at least a program that can think for itself) is still decades away. DQN is just a small step in a very long journey.





FEATURE

# TECH THAT DRIVES PHOTOGRAPHY

What's the first thing you ask when you're trying to find out about a new camera? Chances are, you'll be trying to find out how many megapixels it has, because that's perhaps the easiest concept to grasp. But is that really the be-all end-all for good images?

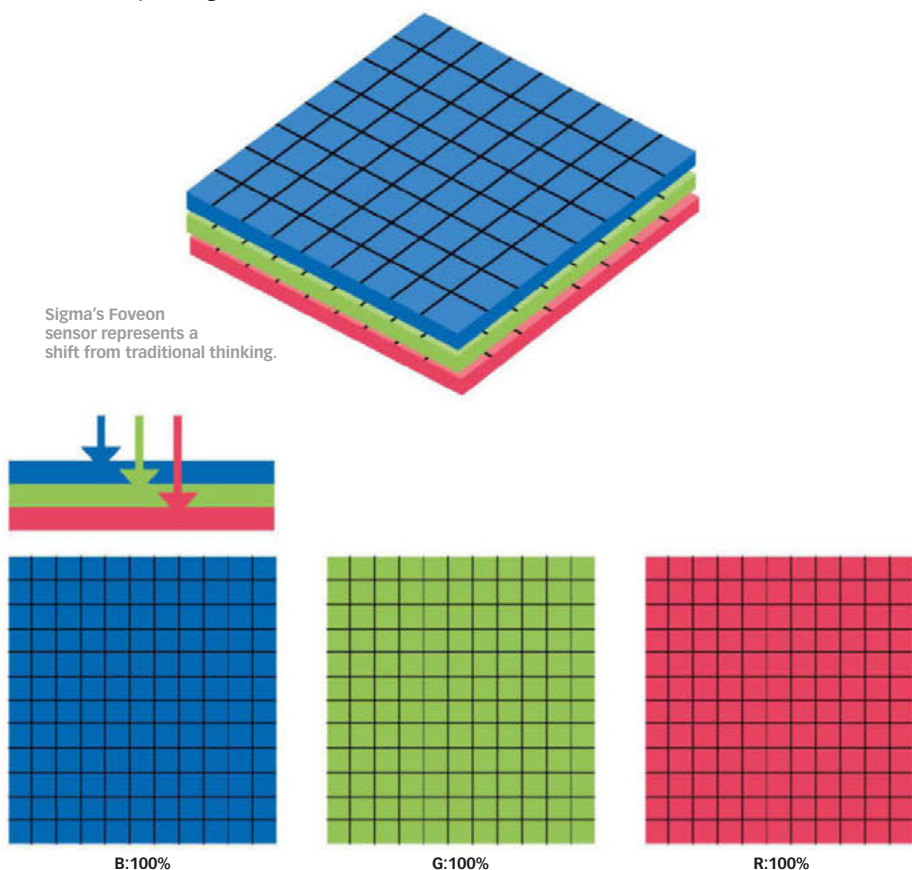
Text by *Marcus Wong* Art Direction *Ken Koh*

## SENSORS ARE MORE THAN PIXELS

While all of today's imaging sensors are optimized for photon (light) capture, the way they are designed can make a difference between how they deal with noise at higher sensitivities, as well as the way they process details and deal with moiré.

FUJIFILM's X-Trans CMOS sensor for example, incorporates an original color filter array with a highly random pattern, which eliminates the need for an optical low-pass filter (OLPF). The X-Trans CMOS's unique color filter array lets the sensor capture unfiltered light from the lens achieving an incredible level of resolution as well as low-light performance.

Meanwhile, Sigma's Foveon sensor rethinks traditional sensor design by having three layers of pixels stacked on top of each other. Instead of having red, green, and blue pixel on the same layer like most imaging sensors, each color gets their own layer allowing it to capture the full color at every point in the captured image. This is akin to how color film used to contain three layers of emulsion which directly recorded red, green and blue light, and essentially works on the same theory – that different colored light penetrate silicon to different depths. The end result according to Foveon is sharper images with less noise.



## Processing light

Need to shoot in low light without a tripod? Then the way the camera handles noise at high sensitivities becomes important.

This largely comes down to the way the imaging engine is told to handle the data collected, and the amount of stress placed on the processor. The harder the processor has to work, the more heat generated, which in itself leads to more noise. Most cameras have noise reduction procedures that determine what the noise is on, and then apply the appropriate reduction (generally some form of smudging and blending) to hide the appearance.

Sony for one, uses several technologies together to reduce noise while maintaining image detail. Area-specific noise reduction selectively divides the image into areas based on patterns (such as edges, textures and evenly colored areas like blue skies), then applies the most appropriate noise reduction for each area. At the same time, diffraction reduction technology takes the aperture setting into account to restore clarity to points of light and other fine details, suppressing the effects of diffraction. Finally, detail reproduction technology depicts details more faithfully with a more natural sense of dimension by preventing overemphasized outlines.

## Not just for the pros!

Point-and-shoot cameras have their own innovations too! Just take Casio for example, who came up with a feature to get better images in low light and one to effectively increase the zoom of the camera.

### High Speed Night Shot

Casio's high-speed Night Shot function uses a series of high-speed photographs to create images in the dark. This works by combining

multiple shots to create photos in situations that would take the equivalent of ISO 25,600 sensitivity, pushing the capabilities of the high-sensitivity CMOS sensor so you can take photos in the dark without the use of flash.

### Multi Frame SR Zoom

All images get pixelated when enlarged to a certain extent. This is caused by the blank spaces in between the pixels. Digital zoom is 'guesswork'

on the part of the camera to fill in the blank spaces. Casio's Multi Frame SR zoom uses 'real' pixels instead, taking multiple images of the same scene with each press of the shutter to fill in the blank spaces between the pixels. The number of shots taken depends on the lighting situation, with the image being shifted in all four directions, allowing for plenty of information from which the blank pixels can be filled.



## THE IMPORTANCE OF FOCUS

Photography isn't all about details or sharpness. After all, there's no point having a camera that can give you perfect detail if it takes so long to focus that you can never properly track your subject. If you like taking images with shallow focus for that bokeh effect, then you'll also want to be certain the camera focuses exactly where you want it to, otherwise you might end up with your subject blurred while the thing just behind him is what's actually in perfect focus.

The two main forms of focus in use by cameras today are Phase-detect autofocus and Contrast-detect autofocus.

Phase-detect autofocus is what most traditional DSLR cameras use, with a prism splitting the light coming from opposite sides of the lens and directing it to paired groups of sensor pixels, each forming an AF point. Depending on the focus, the light falling on these points will either line up, or be shifted one way or another relative to each other, thus allowing the sensor to know how much adjustment to make, and in what direction.

One example of the latest in Phase-detect autofocus is Canon's Dual Pixel CMOS AF, which sees about 80% of the sensor filled with pixels that have two separate photodiodes, effectively doubling the number of focus points for comparison. The system also places some phase detect AF points over the center of the Live View area for initial focusing in movie mode before Contrast-detect AF takes over, allowing for faster AF and more accurate tracking. On top of that are presets that adjust how the focus points react to acceleration/deceleration and the speed at which they switch, thus allowing the camera to better react to different scenarios.

Contrast-detect autofocus on the other hand, uses the difference in light values to determine correct focus - the logic being that an object will have maximum contrast when it is in proper focus. Unlike Phase-detect AF, Contrast-detect AF doesn't give feedback on distance and direction, thus the sensor works by making slight adjustments, checking if the contrast increases or decreases with each shift. This obviously takes longer than Phase-detect autofocus, but has the advantage of not needing an extra sensor for focusing.

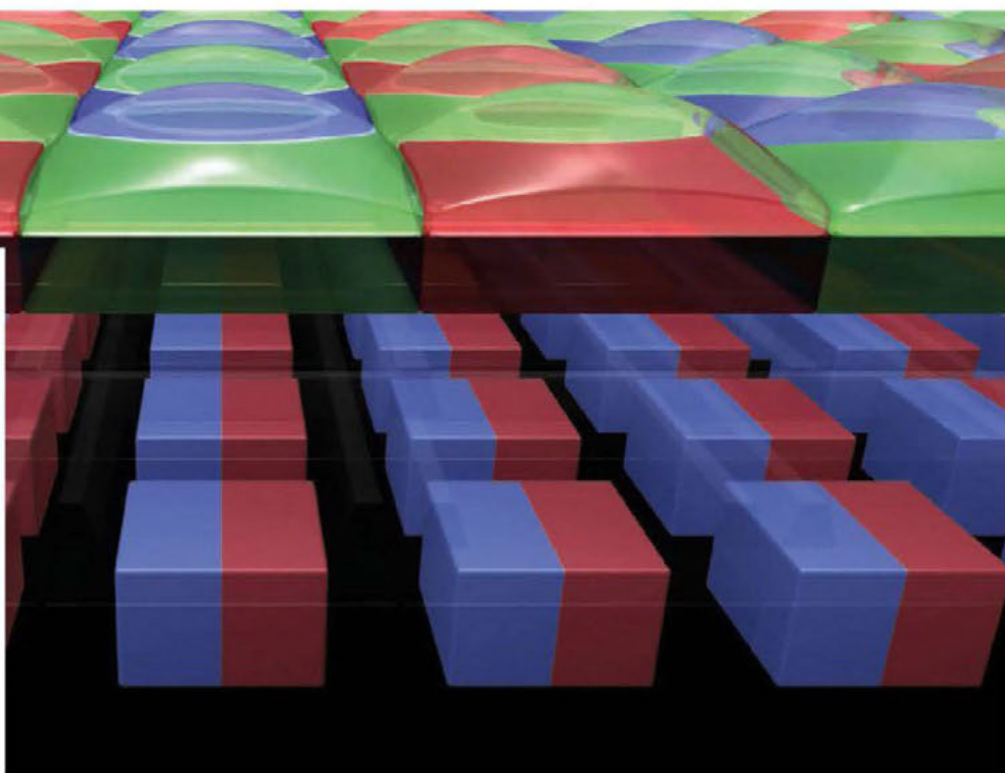
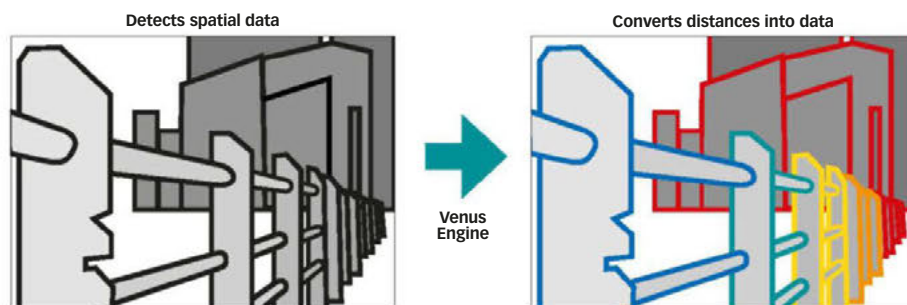


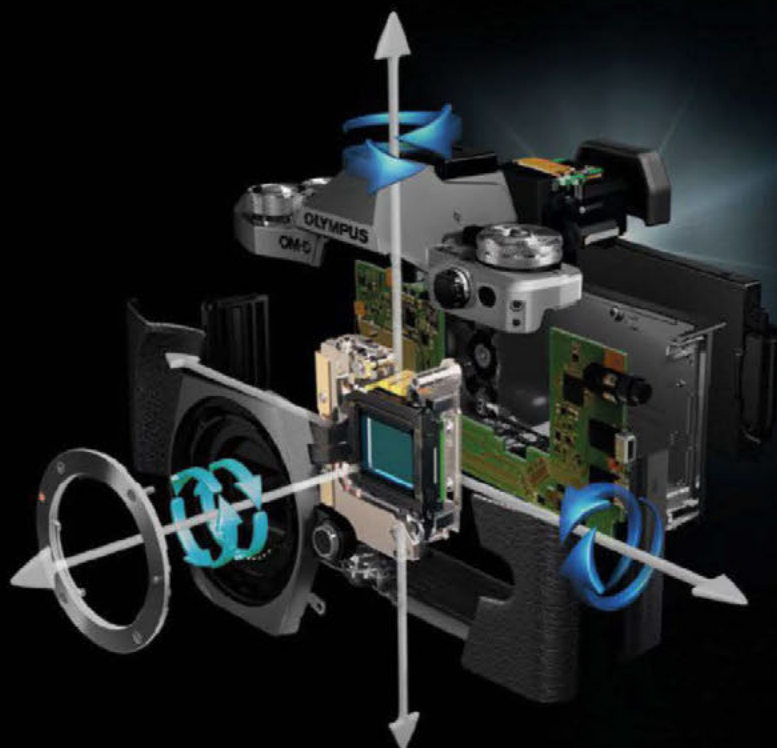
Illustration of Canon's Dual Pixel CMOS AF, where each individual pixel has two separate photodiodes for focusing.

Newer Contrast-detect AF systems have caught up in speed though, and Panasonic's Depth From Defocus (DFD) technology is one example of this. Panasonic's engineers realized that not only could they get the change in contrast measurement with each shift of the lens, they could also get the change in signal strength, and how far out of focus the lens was. Using a database of what essentially is the bokeh effects of all of their own lenses, Panasonic's engineers were able to program their camera to compare just two images by their bokeh "look", and adjust the lens to get close to the final focus setting; with just one or two more normal contrast-autofocus cycles to fine-tune the focus for the final shot.

**THE TWO MAIN FORMS OF FOCUS IN USE BY CAMERAS TODAY ARE PHASE-DETECT AUTOFOCUS AND CONTRAST-DETECT AUTOFOCUS.**



Panasonic's DFD technology calculates the correct distance to the subject by comparing two images with different sharpness levels.



Olympus' 5-axis image stabilization accounts for pan, tilt, and roll.

## IMAGE STABILIZATION

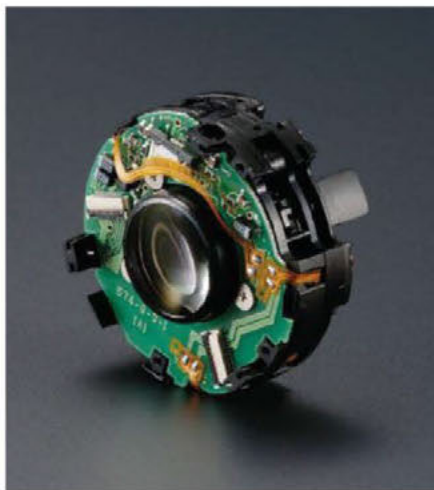
Besides keeping the camera lightweight, image stabilization (IS) is another key feature that camera manufacturers have developed in recent years, and this basically comes in two forms: in-body and lens based.

Nikon has chosen to place its image stabilization system – dubbed VR for Vibration Reduction – in the lens elements, rather than in the sensor. Basically, a selected lens element inside the lens is moved up and down in inverse response to movement detected by accelerometers and gyroscopes, thus compensating for whatever shake the camera (and so the lens) is subject to.

On the other hand, Sony and Olympus have both put their anti-stabilization systems in the camera body itself, and what happens is that a gyro sensor in the body detects both the direct and magnitude of the shake being applied to the camera, passing it over to a processor in the circuit to calculate and apply the appropriate shift to be applied by a moving unit on which the sensor is mounted.

Either way, the net result is that you should be able to shoot between 4 to 5 stops of light darker than what you would normally be able to achieve without, so that's definitely worth consideration.

## IMAGE STABILIZATION BASICALLY COMES IN TWO FORMS: IN-BODY AND LENS BASED.



A Nikon VR Lens unit.

## Cameras gonna shake shake shake?

Both in-body and lens-based stabilization systems have their advantages and disadvantages, so it's important to understand the differences between the two. For lens-based stabilization, one of the main advantages is that the viewfinder image is stabilized as well, which is especially applicable to DSLRs. Second, as the stabilized element is closer to the center of the optical path, it is easier to obtain an optimal level of compensation than with a sensor-shift system. Nikon feels that sensor-shift image stabilization confines the sensor to a limited range of movement, as it cannot move outside the image circle projected by the lens, which is why they stick to in-lens systems.

The argument for in-body stabilization on the other hand, revolves mainly around the fact that putting the stabilization system in the camera itself allows it to compensate for shake in five axes – including pitch and yaw shake that tend to increase at longer focal lengths, shift shake on the X and Y axes that tends to increase as magnification increases (such as during macro photography), and roll shake on the Z axis that especially occurs during handheld movie shooting and long still-image exposures.

Sony and Olympus are keen to make the point that lens-based stabilization cannot compensate for roll, while cameras with in-body stabilization can always be used with lenses that have lens-based stabilization for the best of both worlds, though that will of course mean more cost.



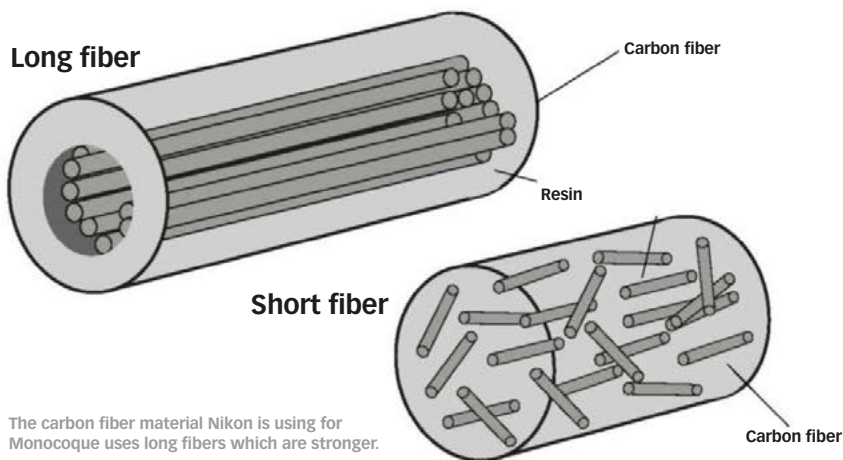
## OF BODY DESIGN AND IMAGE QUALITY

The other factor in getting a sharp image, is being able to keep your camera stable. This is a question of overall mass as well as having a comfortable grip. Weight matters! And this includes the lenses you use, which is probably why compact system cameras have seen such an uptake in recent years.

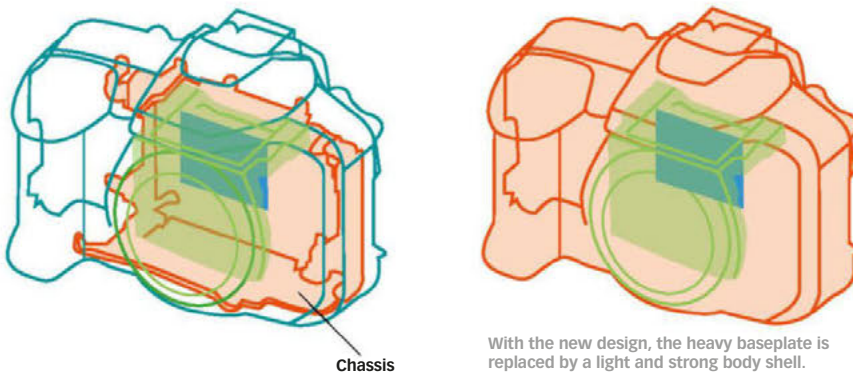
Breaking from the norm, Nikon has taken to using new materials and designs to lighten both their camera bodies and lenses.

The Monocoque design attaches components directly to an outer body shell that employs an advanced material comprising long carbon fibers, which resist bending and twisting far better than many materials, allowing for the elimination of the baseplate, which would normally support the weight of the camera. This also means a reduction in the thickness of the body while freeing up space for a deeper handgrip on the camera, allowing for better handling overall.

Phase Fresnel technology lightens the overall weight of a lens by removing the parts of lens material that do not directly participate in bending and focusing the light rays, resulting in surfaces with a saw-teeth like shape that are much thinner and lighter than conventional lenses. In the correct configuration, this drastically reduces the size and weight of the lens, while preserving optical performance.



### Monocoque body design



## THE BEAUTY OF TOUCH

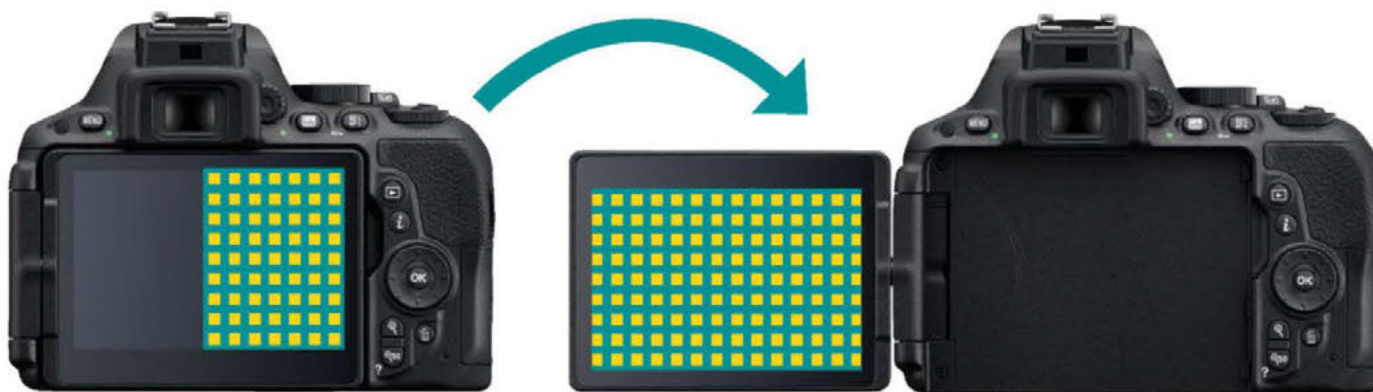
Touchscreen capabilities are also something that have started to become quite common, and while the main advantage may seem to be ease of use in browsing through menus, the other thing is the sheer accuracy of using touch to focus. Instead of struggling to shift to the nearest autofocus point, touch focus allows you to tap the spot directly. Olympus

has a Super Spot AF function, which focuses on a small area in the center of the image and enlarges it another 70 times, allowing you to select your focus point with extreme precision.

In an example of thinking out of the box, Nikon's new D5500 incorporates a new Touch Fn system, which keeps the touch sensitive layer of the screen enabled while your eye

is at the viewfinder so you can still use your right thumb or fingers to control certain functions by swiping. Focus points can also be selected by swiping with your thumb, in addition to other features such as ISO, aperture adjustment and more, so that also makes selecting the appropriate focus point faster and easier. **HMM**

ILLUSTRATIONS KENKOH



Depending on usage scenario, Nikon's Touch Fn (area denoted in green) stay touch sensitive even when the display is off.

SPECIAL

# ALL EYES ON CP<sup>+</sup> 2015

Every year, the press and photography enthusiasts make their pilgrimage to CP+ 2015 to witness the latest technological advancements and innovations from the camera industry. Find out what the Japanese camera manufacturers have in store for you in the coming months.

by Michael Low







## CASIO MADE FOR SELFIE

If there's one thing to take away from the 2015 edition of Japan's annual Camera & Photo Imaging Show, it's that the selfie culture is here to stay. That sentiment was echoed across the exhibition hall of the PACIFICO Yokohama convention center, where compact cameras with built-in Wi-Fi, flip-up display, and the all-important of beauty mode were as much the focus on the showfloor as the latest wave of boundary-pushing camera gear.

Casio, a brand name that's synonymous with the self-expression phenomenon, dedicated its presence at this year's CP+ show to a wide range of EXILIM cameras. Under the 'Amazing Gear' banner, the company unveiled three new ZR series models – the ZR50, ZR1300, and ZR1600 (ZR2000 for international markets), as well as the sporty FR10 modular camera and the EX-100PRO, which is essentially a reworked version of the prosumer EX-100 camera.

Of note are the ZR models, coined as 'Travel Selfie' cameras by Casio itself, which feature 16MP back-illuminated CMOS sensors, EXILIM Engine HS3 image processors, optical zoom ranges from 10x up to 18x, 180-degree tiltable LCDs, advanced makeup functions, and with the exception of the ZR1300: built-in Wi-Fi, lens-shift image stabilization, and a front shutter button for easy selfies.



The active and detachable EXILIM FR10, which launched locally in November last year.



(From left to right) The new EXILIM ZR1600, ZR50, and ZR1300, which Casio classifies as the Travel Selfie series.





Apart from being powered by EXILIM Engine HS3, the new ZR series cameras – like the ZR1600 pictured here – comes complete with a front shutter button that makes taking selfies a breeze.



We were also introduced to the ZR3500 – successor to the ZR1500 – behind closed doors, which inherits the image quality and enhanced Make-up Plus mode of the ever-fashionable TR50 beauty camera. Like the ZR1600, the 12-megapixel ZR3500 incorporates Bluetooth Smart technology, which combines Wi-Fi and Bluetooth LE (Low Energy) to offer two modes of convenience.

Once paired with a smartphone via the EXILIM Connect app, the ZR3500 maintains connectivity with the phone, even when the camera is switched off. You can then 'wake up' the camera, remotely capture photos and videos, review your shots directly from your phone. More importantly, each captured images is automatically transferred to the

smartphone after every shutter release. From there, you can easily upload the photos to Instagram or Facebook to share with friends and family.

Casio's Make-up Plus mode, which improved upon the regular Make-up mode, allows detection of up to 10 faces, including 12 levels of skin tone and skin smoothening effects to enhance the user's appearance, without affecting the hairline and eye area. So whether it's a selfie or a wefie, you and your friends are assured of a natural-looking skin tone and smoother complexion.

While no pricing and availability date has been announced, the EXILIM ZR3500 is expected to arrive in Malaysia some time this year in four colors: White, Pink, Yellow and, Beige.



The various shooting possibilities afforded by the EXILIM FR10.



Two lovely ladies showing the crowd how it's done.



## CANON NO HOLDS BARRED

No stones were left unturned at Canon's booth, as they unveiled a comprehensive lineup of cameras and accessories, including the PIXMA Pro-10S and Pro-100S printers. While most of the attention was understandably focused on the 50.6-megapixel EOS 5DS and 5DS R, others also flocked to the hands-on area to try their hands on the EOS 7D Mark II, EOS 8000D (known as EOS 760D here), EOS M3, and also the PowerShot G7 X.

The EOS 760D is a 24.2MP APS-C DSLR for entry-level users seeking advanced shooting features. It has a top LCD information display and a quick control dial for immediate settings adjustments, while Servo AF is supported in Live View to maintain focus on subjects that are in motion.

Also popular with the crowd was the PowerShot G7 X, a 20.2MP premium compact with a 1-inch back-illuminated CMOS sensor, tiltable LCD, built-in Wi-Fi and NFC, and a 31-point AF system. In addition to its bright f/1.8 lens, the G7 X is also quick to the draw for up to 6.5 fps continuous shooting.



Got an NFC camera? Just tap it on the Connect Station CS100 to initiate photo and video transfer. You can then view them on your TV or share them online.



Putting the EOS 8000D (aka EOS 760D)'s Touch Shutter to the test.



The PowerShot G7 X sports a 1-inch CMOS sensor, as well as a tilt-type LCD screen that flips all the way up for taking selfies.



Don't be fooled by the super-compact nature of the XQ2, as it features many of the same features as the X30, such as a 2/3-inch X-Trans CMOS II sensor, EXR Processor II, high-speed AF, and Classic Chrome film mode.

## FUJIFILM CLASSY COMPACTS

Understanding the importance of selfies, FUJIFILM announced the X-A2 that automatically activates Eye Detection AF when the LCD is tilted to the front. Autofocusing is made speedier and precise with the addition of Auto Macro AF and Multi AF, while the two new kit lenses – the XC16-50mm F3.5-5.6 OIS II and XC50-230mm F4.5-6.7 OIS

II – ensure high-quality images can be captured with relative ease.

The XQ2 – also the newest and smallest member in the X Series family – can be thought of as the X30 in an ultra-slim (100 x 58.5 x 33.3mm) form factor. In addition to its premium finish, the XQ2 is fitted with a bright f/1.8 wide-angle lens with 4x optical zoom and 3cm macro focus.



Also showcased was the entry-level X-A2, which is incidentally the first X Series camera to incorporate a 175-degree tilting LCD for, you guessed it, selfies.



The Wonder Photo Box is just as magical as it sounds – an all-in-one device to store, organize, and share photos from your smartphones, cameras, and USB drives. Users can even order photo prints and Photobooks directly from the device in supported countries.

## OLYMPUS FOR THE ENTHUSIASTS



Some of the underwater housings that are available for Olympus' camera lineup.



Olympus Air with the M.Zuiko Digital ED 14-42mm F3.5-5.6 EZ lens.



The two body variants of the OM-D E-M5 Mark II.

The OM-D E-M5 Mark II dominated the Olympus booth, where a substantial number of units were readily available for the eager visitors to try. For one, it promotes handheld shooting with its sensor-based 5-axis image stabilization system. Second, the compact, yet ruggedized all-metal body and plethora of physical controls makes outdoor photography a pleasure.

Most interestingly, Olympus took to smartphone photography with Air, a 16MP lens camera – not unlike Sony's QX lens-style series – that can mount any Micro Four Third lens. A total of eight apps are

made available for iOS and Android smartphones, which communicate with the Air via Bluetooth and Wi-Fi. With an open platform in place, Olympus expects to see third-party apps being developed for its lens camera.

The company also dedicated a sizable section of its booth space to highlight the 3.0 firmware update for the OM-D E-M1 camera, which raises the maximum continuous shooting speed from 6.5 to 9 FPS. The update also allows E-M1 users to remotely capture images and videos using the Live View screen on their smartphone with the Olympus Image Share app installed.



Designed for the selfie crowd, the LUMIX GF7 is a 16MP compact shooter with a 3.0-inch flip-forward touch panel and a slew of beauty modes to enhance your self-portraits.

## PANASONIC IT'S A 4K WORLD

If there's only one word to describe Panasonic at CP+ 2015, it would be 4K. Whether photos or videos, the company demonstrated its commitment to the 4K ecosystem with an array of cameras, such as the LUMIX GH4, LUMIX GF7, and the Android-powered LUMIX CM1 smartphone-camera hybrid.

On this side of the LUMIX CM1 is a 20.1MP 1-inch sensor with an f/2.8 Leica lens, while the other side sports a 4.7-inch Full HD display where the majority of shooting options are relegated to.



A 4K recording system consisting of a LUMIX GH4 and the Atomos Shogun monitor recorder.



## RICOH OUT OF THE BOX

Following its acquisition of Pentax in 2011, Ricoh Imaging continued to refine the adventure-proof camera series, leading to the new WG-5 GPS. Bearing more than a passing resemblance to its predecessors, the rugged compact camera sports a built-in GPS module, along with a 16MP back-illuminated CMOS sensor, 25mm wide-angle f/2.0 lens, and 4x optical zoom.

More importantly, the WG-5 GPS is waterproof up to 14m, shockproof against drops of up to 2.2m, freezeproof to -10°C, and crushproof against weights of up to 100kgf. New to the camera is a sub LCD screen that displays crucial information, such as pressure or altitude levels.



A colorful collection of K series DSLRs adorned the wall at Ricoh's booth.



Like the other WG series cameras, six LED lights surround the lens to illuminate close-up subjects.



Seen here is the Ricoh Theta, a spherical camera that relies on two fish-eye lenses to capture images or videos (up to three minutes long) on each side of its body, which are then stitched together for easy 360-degree viewing on the companion iOS/Android app, or PC and Mac.



Sony prepared an impressive diorama of a rural train station for visitors to try out the A6000 and A7 II.



An assortment of Alpha mount lenses to feast the eyes.



This close-up shot of a moving model train was captured using the A7 II with a FE 70-200mm F4 G OSS telephoto zoom lens.

## SONY GAME-CHANGING AF

Sony's 4D Focus technology, previously alluded to at last year's Photokina, featured prominently at the booth, where a model bird circled over a large diorama depicting a Japanese countryside. The 4D moniker essentially means fast, continuous AF on a locked-on subject with incredible accuracy, thanks to a wide coverage area (179 AF points) and predictive tracking system that doesn't readjust focus on a distracting new subject.

Visitors were given the opportunity to wield the A6000 and A7 II with an array of A-mount and E-mount lenses to capture the model bird in mid-flight, as well as the moving model train with quick, accurate results.



The dp3 Quattro is fitted with a 50mm f/2.8 lens for mid-telephoto and macro shooting.

## SIGMA UNO, DOS, TRES...

With the arrival of the dp0 Quattro, there are now four cameras in Sigma's unconventional Quattro family. Equipped with a 14mm f/4 lens, this latest incarnation once again makes use of the Foveon X3 sensor that captures red, green, and blue colors as separate layers to produce highly detailed images with realistic colors.

Sigma also took the opportunity to introduce its new 24mm F1.4 DG HSM Art lens at CP+ 2015, which is designed for full-frame DSLRs, but can be paired with APS-C systems to provide a 38mm-equivalent focal length. It also allows for full-time manual focusing in AF mode, similar to the 50mm Art lens.



With the dp0 Quattro, Sigma now has four cameras in the Quattro series.

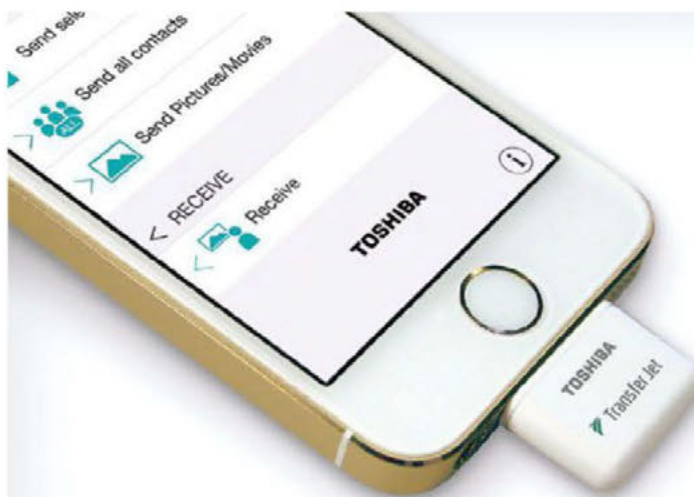


An exploded view of the Sigma 150-600mm F5-6.3 DG OS HSM lens.

## TOSHIBA BRIDGING THE GAP

TransferJet isn't exactly new. It's reminiscent of NFC in that it links two devices that are in close proximity, but with the added ability to transfer data at an effective 375Mb/s. Last year saw Toshiba introducing the USB and Micro-USB adapters for Android devices. For CP+ 2015, the company showed off the USB dongles for iOS devices, which connect to the iPhone's or iPad's Lightning connector to allow high-speed file transfer – up to 100MB in about three seconds – using the free TransferJet iOS app.

Also showcased was the world's first SDHC memory card with built-in NFC. Available in 8GB, 16GB and 32GB variants, Toshiba's NFC-enabled SDHC card lets you preview its contents by holding it close to a compatible Android smartphone with the 'Memory Card Preview' app installed.



The adapter supports iOS devices with a Lightning connector.



There's also a USB adapter to add TransferJet capability to notebook PCs.



The app offers thumbnail previews, along with information like the available storage space.



## DJI AERIAL CINEMATOGRAPHY



Meet the Spreading Wings S1000+, accompanied by the A2 flight controller and the Z15-5D III (HD) gimbal for the Canon EOS 5D Mark III.



As expected, DJI's booth was a huge crowdpleaser, thanks to its mix of live demonstrations and comprehensive product showcase. At any given time, visitors can be found surrounding the booth for a better look at the wide range of Ready-to-Fly quadcopters, such as the Inspire 1 and Phantom 2 Vision+. Professional aerial photographers were also treated to a display of the Spreading Wings S1000+, which can be fitted with a DSLR using the corresponding gimbal.



Seen here is the reinvented Petzval Lens that's mounted to a Canon EOS 6D.

## LOMOGRAPHY LEGEND, REINVENTED

While film photography is very much alive in Japan, Lomography brought along its new Petzval Art Lens, which famously garnered over 10 times the funding goal on Kickstarter. We experimented with the regular circular diaphragms (f/2.2 to f/16), as well as the star-shaped aperture plate, leading to shots with swirly bokeh and interesting out-of-focus background elements.



In addition to the custom aperture plates, you can even make more of your own!

## LYTRO LET THERE BE LIGHT

The highlight of Lytro's booth was undoubtedly the ILLUM camera, which Light Field technology to deliver 'living pictures' that are viewable in 3D with a 3D TV and accompanying glasses, in addition to the interaction options found in Lytro Desktop and Lytro Mobile App.



Train models figured prominently among most CP+ exhibitors.



## BEVY OF BEAUTIES

It won't be a CP+ show without an abundance of lovely ladies to light up the showfloor and charm the camera-toting crowd. Here are the few that we spotted this year:







FEATURE

# MWC 2015

What will they think of next? That's often the biggest question when it comes to smartphone innovation. Here are the top trends and highlights from Barcelona you can look forward to.

Text by *Team HWM* Illustration *Ven* Art Direction *Ken Koh*

# Order Restored In The GALAXY

The GALAXY S6 marks the start of a new Samsung Mobile.

By Ng Chong Seng

P

lastic. It's a word long associated with Samsung's mobile devices, especially its GALAXY series of smartphones. I don't know if Samsung has given a bad name to it, or the other way round, but it's hard to argue against the many good properties of

this synthetic material. For one, plastic is easier and cheaper to work with, which explains its widespread use in hardware products across industries. And while it's not impervious to scratches, they usually aren't very noticeable. Of course, when dropped or subjected to stress, plastic is less likely to dent or bend as much as metal.



What's wrong with plastic is that it doesn't feel premium. Regardless of treatment, it'll never, ever feel as good as a solid block of steel or aluminum. But the worst part is when the finishing can't withstand the test of time. I used to own a GALAXY S4 that had a plastic frame with a metallic-looking chrome finish. The paint started flaking six months in. Remember, this was a RM2,199 flagship phone (at the time) I'm talking about here. It's unacceptable.

But it's not as if Samsung isn't aware of what people are complaining about. For a while now, the Korean company has promised big design changes for its phones. We saw hints of that in the GALAXY Alpha, Note 4, and Note Edge with their metal frames; and more recently, the midrange GALAXY A series phones with their full-metal design. But these seemed like half-hearted experiments, quick dips of the toe in the water if you will.

## THE GALAXY S6, ANNOUNCED AND SHOWN OFF DURING MOBILE WORLD CONGRESS, IS UNDOUBTEDLY THE NICEST-LOOKING AND FEELING PHONE SAMSUNG'S MOBILE DIVISION HAS CHURNED OUT TO DATE.

The GALAXY S6, announced and shown off during Mobile World Congress in Barcelona this past March, however, is different. Codenamed 'Project Zero', this is undoubtedly the nicest-looking and feeling phone Samsung's mobile division has churned out to date (shocking, I know). There's a metal frame, made of a harder alloy so that it's less likely to bend; Corning's Gorilla Glass 4 at the front protecting the 5.1-inch, Quad HD (2,560 x 1,440 pixels) Super AMOLED display; and the same Gorilla Glass at the back.

### Remarkable restraint

Sure, the GALAXY S6's glass back may well

be a deliberate move to stem the copycat talk (recent HTC Ones and iPhones are known for their metal unibody designs) - but that's really besides the point. The most important thing is these glass covers don't feel cheap at all. In fact, Samsung has rather cleverly worked it to its advantage. Through the use of a new type of colored finish under the glass, the S6 is offered in an array of "jewel tones". Yes, that's marketing speak, but it's also quite an apt description. Due to the way light is reflected, each color looks and sparkles a bit differently at different angles - you know, just like a jewel.

Reducing "feature spam" is another piece of advice Samsung has taken to heart, and this continues on the GALAXY S6. It's now hard even for critics to pick out a new feature and call it superfluous. The double-tap-home-screen-button-anywhere to open the Camera app; the improved front and rear cameras

(16 and 5 megapixels respectively); the faster AF tracking; the built-in wireless charging that rids the need to buy a separate cover - these are all solid improvements, features that benefit more than just a handful of users.

Samsung also shows remarkable restraint with the GALAXY S6 edge, which is mostly an S6 with curved left and

right edges. The Samsung of old would have devised many over-the-top ways to make use of the curved strips, but not this time. The two main uses of the sloping edges - Information Stream, which displays things like weather, time, and notifications; and People edge, which lets you use either side of the strips to quickly access calls, text messages, email, and frequent contacts - once again make tremendous sense.

There's also something I didn't envision myself saying a couple of years ago: TouchWiz, Samsung's user interface that sits atop Android, is finally responsive. Gone are most of the bloatware and S-branded

## Microsoft (apps) everywhere

With less than 4% market share, Microsoft's Windows Phone hasn't quite gone everywhere. And at MWC, the Lumia 640 and Lumia 640 XL are hardly the kind of hardware that will set your heart racing. I can only posit that the Redmond-based company is saving the ammunition for the end of the year to coincide with the launch of Windows 10.

On the other hand, Microsoft's software and services are going places. In the past 12 months, it has brought Office to the iPad, extended it to Dropbox, and acquired third-party apps like Acomplia and Sunrise to supplement its Android and iOS offerings. And just last month, a preview version of Office 2016 for Mac has dropped for long-suffering Office for Mac 2011 users.

Microsoft is also open to partner with competitors. On the new Samsung GALAXY S6 and S6 edge for example, there's a Microsoft Apps folder that's home to apps like OneDrive, OneNote, and Skype. This partnership also sees Samsung ending its deal with Dropbox. Instead of free Dropbox cloud storage, the new phones will come with free 100GB of OneDrive storage for two years.

apps, save for the truly useful ones like S Health, S Planner, and S Finder. UI navigation is less intimidating and more straightforward too, thanks to the reduction of settings in menus and the replacement of obscure icons with text. Coupled with generational hardware improvements like the crazy-fast Exynos 7420 processor and 3GB of LPDDR4 RAM, even the slightest of micro stutters are gone.

All that said, there's no guarantee that the GALAXY S6 and S6 edge will be a success, and they come at a time where the company is experiencing declining mobile profits. So far, Samsung has been making all the right moves; let's see how the consumers react when the phones go on sale on April 10.



# Resisting the commoditization of smartphones

How mobile brands like HTC are trying to keep things fresh.

By Jimmy Tang

**T**he smartphone business is no longer the same as before as the average selling price of devices continue to fall and feature sets becoming increasingly similar. Manufacturers are all adopting standard specifications either dictated by the chipsets offered by low-cost SoC vendors or standard parts that provide OEMs with better cost advantage. No matter how you look at it, there's little differentiation remaining in today's mainstream and budget devices. At the end of the day, the focus is really on price.

But some manufacturers are not interested in racing to the bottom with brands that focuses only on budget smartphones. They know all too well that once they start to descend and compete in that market segment, it'll be a continual downward spiral towards the commoditization of smartphones.

Smartphone manufacturers like Samsung recently noted that although market competition is stiff, it would continue to offer premium products with the use of higher quality materials, thinner unique designs and exceptional hardware like higher resolution displays across its portfolio of products.

HTC, on the other hand, believes that there are still a lot of room left for unique differentiation and firmly thinks that the commoditization of smartphones would not happen anytime soon. Noting how smartphones are highly personal devices, HTC doesn't think that consumers would settle for generic-looking products.

The recent launch of the Samsung GALAXY S6 and HTC One (M9) demonstrated how both companies are trying to set themselves apart from their competitors with more premium specifications and greater luxurious feel to the smartphone's build. While Samsung has finally replaced its cheap plastic finish in its flagship series with glass, HTC kept their design DNA and improved on its aluminum finishing. Although both companies have a very different

approach to their design, they have one thing in common - design and product personalization ranked high on their list of priorities.

Still, smartphone manufacturers are not resting on their laurels. Pressured by dwindling sales and lowered profit margins, manufacturers are now looking beyond smartphones for the next source of revenue. Popular brands like Samsung, LG and Sony have already started venturing into the smartwatch space while Apple has only just released the Apple Watch this month. However, that's not the only trend that these companies are betting on.

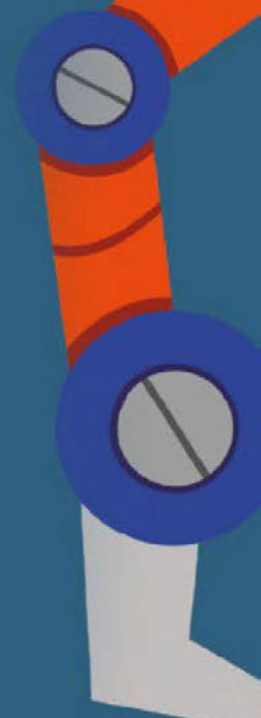
Beyond smartwatches and fitness bands, manufacturers are now eyeing the lucrative yet untapped market for VR headsets. Samsung is already on their second iteration of the Samsung Gear VR that works only with the Samsung GALAXY S6 while HTC announced the HTC Re Vive, a new VR headset targeted specifically at gamers. One thing in common with these two company's strategy is that they are not going into this alone. Samsung is building its Gear VR headset in collaboration with Oculus VR while HTC is partnering with Valve. The approach is not surprising because both technology partners have the technical know-how and content to support the

products while it's obvious that Samsung and HTC are only playing the role of a hardware developer and manufacturer. Still, it's not an uncommon partnership given how Android smartphones heavily depend on Google for its software and apps ecosystem.

Besides Samsung and HTC, Sony is also investing in the VR market with Project Morpheus. Announced early last year, the product has been work-in-progress with a launch date set somewhere in 2016. It's not clear if the product is going to be extended beyond gaming on the PS4 but unlike Samsung and HTC, Sony is entering the VR market by itself.

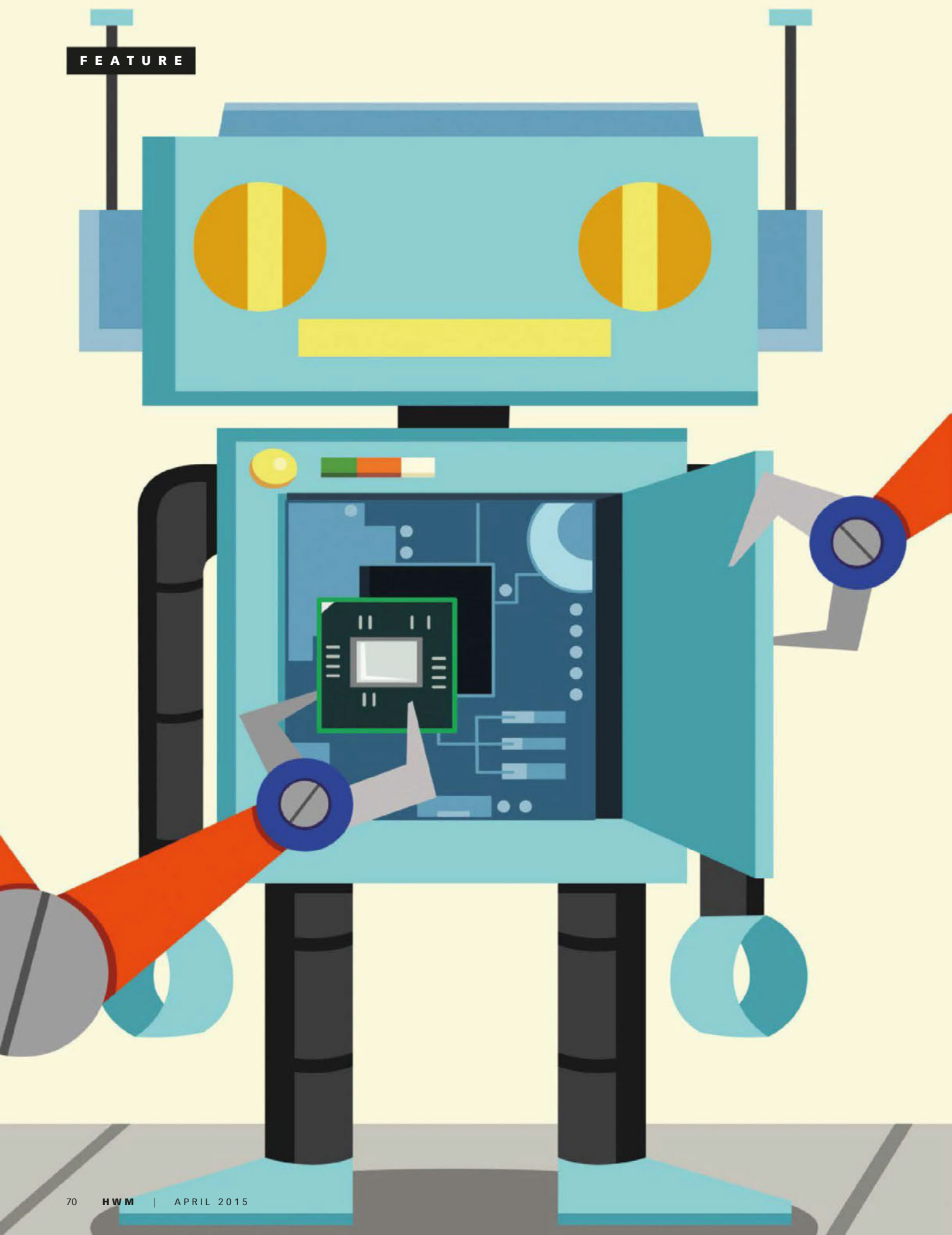
There seems to be no lack of opportunities and product diversification seems to be the main strategy for smartphone manufacturers to remain relevant in this competitive marketplace.

**HTC BELIEVES THAT THERE ARE STILL A LOT OF ROOM LEFT FOR UNIQUE DIFFERENTIATION AND FIRMLY THINKS THAT THE COMMODITIZATION OF SMARTPHONES WOULD NOT HAPPEN ANYTIME SOON.**











# In the near future, smartphones may work like your brain

"Qualcomm's Deep Learning mobile platform that will change everything about how your phone interacts with you."

By James Lu



For several years now, chipmaker Qualcomm and Brain Corp, a separate company that it has invested in, have been working on a combined hardware and

software platform that attempts to mimic the processes of the human brain. They call the platform, 'Zeroth'.

The goal of Zeroth is for it to do more than just perform pre-programmed tasks. It will also be able to learn and adapt accordingly. The technology driving Zeroth is based on a family of algorithms called Deep Learning, which has also been used by Google subsidiary DeepMind to program a computer to play Atari video games at a superhuman level. Deep Learning software is loosely modelled on the way the human brain works: it can be trained to recognize certain objects in images by processing many example photos through a network of artificial 'neurons' arranged into hierarchical layers. In other words, it recognizes images by comparing them to other images in its memory, similar to the way you can identify objects, even if you've never seen that same exact object before, based on your own past experiences.

At MWC 2015 last month, Qualcomm showed off the first working prototype of Zeroth. When integrated into a smartphone, it demonstrated how Zeroth could improve a smartphone's camera app by being able to successfully recognize individual elements of what you're taking a picture of, such as food, a city skyline or a group of friends, even if it had no prior experience with the actual subject matter you're shooting. The app would then automatically adjust the camera settings to ensure you take the best possible picture. The app was even capable of live tagging the names of your friends in real time by referencing previous photos you've taken of them.

Qualcomm also said that, as well as processing images, the Zeroth software could



allow phones to recognize speech or other sounds, and to learn to spot patterns of activity from a device's sensors. Computing at this level, which requires more than just simple task operations, generally requires Cloud Computing to accomplish, but Qualcomm says that all such computation will be performed on the phone itself. By keeping all operations at a local level, not only will Zeroth remove the requirement of Internet connectivity, it will also enable faster feedback and action to be taken from data received from the device's sensors. Qualcomm has suggested that one of the first practical applications of Zeroth's predictive learning skills will be extending device battery life by tracking the way a person uses their

phone and learning when it can safely power down to save energy without affecting the user experience.

The Zeroth software is being developed to launch with Qualcomm's Snapdragon 820 system-on-a-chip, which will enter production later this year, meaning it should be available in consumer devices in early 2016. Qualcomm has also announced that as well as smartphone manufacturers, the Snapdragon 820 and the Zeroth software will be aimed at manufacturers of artificial intelligence drones and robots. Hopefully, the platform lives up to its name - it's taken from science fiction author Isaac Asimov's 'Zeroth Law of Robotics': "Robots must not harm humanity." **HMM**

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TEST

# LAB RESULTS

Every month behind the doors of our super secret gadget testing facility, the latest tech products are put through their paces using industry-recognized benchmarks and our own blend of real-world usage scenarios. Here are our findings.

## HOW WE RATE:

Products are rated on a scale of **1** to **10**, **1** being so abysmal, it should be a crime to sell it, and **10** being almost perfect. Come now, nothing is perfect. An Editor's Choice may also be awarded based on unique merits.

## MORE INSIDE >

ELYSIUM PORTO V  
Barenaked acoustics.

HP OMEN  
If looks can win at gaming.

LENOVO YOGA 3 PRO  
Featherweight workhorse.

LOGITECH ORION SPARK G910  
Not perfect but nearly there.



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# THE APS TO SEE

The APS-C camera is still perhaps the best compromise of all current camera technologies – with images small enough to allow for high continuous shooting rates and sensors large enough to offer great ISO capabilities for low-light performance. We put four of the top APS-C cameras to test to determine which comes out tops.

Text by *Marcus Wong*  
Photography by *Darren Chang + Vee Chin*  
Art Direction by *Ken Koh*  
Location by *The Cage*





**vs**  
CANON EOS 7D MARK II

•  
FUJIFILM X-T1

•  
SAMSUNG NX1

•  
SONY SLT-A77 II



## CANON EOS 7D MARK II

Given how well the original 7D was received, the 7D Mark II was understandably one of the most anticipated releases of 2014, as it has been a good five years since the original. Physically, there hasn't been that much of a change between the two cameras; the 7D Mark II is slightly larger on all sides, and the button layout matches the 5D Mark III more closely.

There's a larger depth of field preview button, and more importantly, the inclusion of a new AF area selection lever that doesn't do anything until you first press the AF point selection button – it then lets you toggle between a set of seven AF area modes. This alone doesn't sound all that impressive, but dive into the menus and you can set it to activate custom functions to various directions – much like on the FUJIFILM X-T1.

At 820g, the 7D Mark II is the heaviest camera here and also the only traditional "DSLR" that still features a mirror box and pentaprism. The 7D Mark II doesn't feature a tilting LCD, which is a little disappointing in today's market as that seems to have become an expected standard; it is quite handy when you

can't have the viewfinder at eye-level.

Also new is the inclusion of a Rate button and a Creative photo button, which allow you to rate your images and to quickly bring up options for changing your looks via one Canon's Picture Styles, creating a multiple exposure image, or by in-camera HDR. Handy options to have at a push of a single button.

We like that there's a physical switch to flip between movie recording and stills capture, and that size of the start/stop button is large enough for operation by feel. The Quick Control button is also much appreciated, as that calls up a menu to allow you to quickly adjust your settings and custom functions, allowing you to quickly customize the camera to best fit what you're shooting.

While the 7D Mark II is easily the largest camera of the group, it also has the largest battery, which contributes to it having the best battery life at 670 shots (CIPA rated). It's also the only camera with dual card slots, which is handy as it lets you have an instant back-up of your images, keep video and stills separate, or have extra storage for long photography sessions.

**+**  
**Best battery life of the group.**

**–**  
**Fixed LCD feels dated by today's standards.**



### AT A GLANCE

**Sensor**  
APS-C CMOS

**Megapixels**  
20.2

**Dimensions**  
148.6 x 112.4 x 78.2 mm

**Weight**  
820g

**Price**  
RM5,999



A dedicated button calls up in-camera retouching options.



A dedicated switch flips between stills and video capture.



The 7D Mark II supports CF and SD cards.



## FUJIFILM X-T1

If first impressions count, the X-T1 stands out immediately as the most retro-inspired, with a design closely matching FUJIFILM's 35mm film cameras of old (like the STX-2 for example). Combined with modern-day mirrorless technology, the X-T1 is the most portable camera of the group.

Dedicated physical dials handle shutter speed, exposure compensation and ISO settings, while aperture control comes directly from the lens. There's a switch on all X-series lenses and a click wheel near the mount that controls the aperture settings. It's an elegant solution that lends a better tactile sense than aperture rings on typical lenses, and it works really well. While the shutter dial only goes up to 1/4000s, a recent firmware update puts the front control wheel in play too; turning this wheel when electronic shutter is enabled allows you access to shutter speeds up to 1/32000s.

If you've been using a traditional DSLR for a while, you may find yourself looking for the aperture/shutter dials, or wondering why the front and rear dials only allow you for 2/3 stop adjustments in either direction, but once you get

used to it, we're fairly confident you'll find the layout allows for quick adjustments too.

As with the 7D Mark II, there's a quick select "Q" button that gives you easy access to all your commonly used settings. The four directional buttons surrounding the Menu/Ok button can be

customized to act as function buttons, allowing for quick personalization of your camera. One thing we don't like though, is the button to start video recording. This is a little too small in our opinion, and its position between the power switch and the exposure compensation dial makes it a little hard to depress.

Of the four cameras featured here, the X-T1 is the most compact and the lightest at just 440g (body only with battery), and yet it still feels like all the controls are comfortably within reach.

In our opinion, there are just enough custom buttons to balance between ease of use and interface clutter, plus the electronic viewfinder (EVF) is a joy to use. While there's no pop-up flash, a hotshoe mount unit is provided that folds away conveniently so you could easily leave it on all the time.

**+**  
**Lightest and most compact camera of the group.**

**—**  
**Video seems to be an after-thought for this camera.**



### AT A GLANCE

#### Sensor

APS-C CMOS

#### Megapixels

16.3

#### Dimensions

129.0 x 89.8 x 46.7 mm

#### Weight

390g

#### Price

RM4,388



While the shutter dial is marked at full stops, turning the front control wheel allows you to select in-between speeds.



The X-T1 comes with a hotshoe flash that folds down for storage.



The X-T1 has easily the slimmest profile of all the cameras in this group.

## SAMSUNG NX1

The NX1 is Samsung's first attempt at targeting professionals, and we must say they've done a highly commendable job. The electronic viewfinder is large and extremely bright, providing 100% coverage with 1.04x magnification, while the rear LCD is a gorgeous 3-inch Super AMOLED screen with tilt and touch that is a joy to use. After all, why press a tiny button multiple times just to shift a cursor to the right option when you can select it direct via touch?

Two dials adorn the top of the NX1. The four buttons on top of the left dial let you change ISO, AF mode, exposure mode, and white balance, while turning the dial itself lets you change between drive modes. We do like the implementation of a push lock on the right dial though. Depress it and it pops up, unlocking the mode dial. When done, press it down again to prevent further changes. Both dials are also textured for better feel – small touches, but ones that count.

The usual ports are found on the left of the body, with the NX1 supporting USB 3.0 and providing jacks for both a microphone and for

external headphones for audio monitoring. There's also a somewhat small LCD window on the top right of the camera for your basic settings, but overall, the size of the NX1 feels just about right – neither too large to be bulky, nor too heavy to be tiring.

**+**  
**Impressive set of features packed into one camera.**

**–**  
**Noise reduction at higher ISOs is too aggressive.**

NFC has also been incorporated for easy pairing, and Wi-Fi support adds the option of remote control via the companion app on your smartphone.

However, we never did manage to get it working on our iPhone 6, so it appears some work still needs to be done there.

Overall, the camera is extremely responsive (perhaps more so than any other camera in the group) and we think the buttons are sensibly laid out, with everything easily within reach. You don't have to do much menu-diving to get to any particular

function, and the implementation of touch on the rear screen is a great boon. The only thing that's lacking is dual card slots for immediate backup or overflow capabilities – especially important given the large file sizes for both 28-megapixel stills and 4K video.



### AT A GLANCE

**Sensor**  
APS-C BSI CMOS

**Megapixels**  
28.2

**Dimensions**  
138.5 x 102.3 x 65.8 mm

**Weight**  
550g

**Price**  
RM4,699



Instead of a lock button you have to keep depressed, the NX1's lock button pops up when released, and locks down when engaged.



The Quick menu allows for quick adjustment of all settings – by touch.



The only thing missing is a second card slot for easy backup.



## SONY SLT-A77 II

Coming some three years after the launch of the original SLT-A77, the SLT-A77 II is Sony's update of their semi-professional APS-C camera, and perhaps more importantly, signals Sony's intent to stay invested in their single lens translucent lineup. The SLT-A77 II gains NFC and Wi-Fi capabilities (to pair with Sony's PlayMemories Mobile app that shares shots from your camera to your phone) and a new 79-point AF system that promises faster response.

The SLT-A77 II feels like a massive camera when you pick it up; more so when you have the SAL1650 kit lens attached, but of course that's a bright f/2.8 lens, so the weight is somewhat justified. The buttons on the camera are the largest and easiest to depress, and there's a raised multi-selector button that acts as a joystick for you to navigate through the menu system.

This multi-selector button is larger than the one on the 7D Mark II, but we feel the added size and additional raised height allows it to be operated more comfortably with better precision. The body design allows for a sizable grip area on the right of the body, which helps balance out the weight

somewhat. A total of 11 customizable buttons are available on the body with up to 51 assignable functions, so you can truly set this camera up as you wish.

Perhaps the biggest stand out feature on the A77 II is its 3-inch WhiteMagic articulating LCD display, which not only flips up and down on a panel that flips up and out from the body of the camera, but also swivels around a joint on the panel. This means you can have the display above the camera, below it, and even tilted 90° to the side should the need arise, which makes it handy when you're trying to get pictures from those awkward angles.

The camera itself is fairly responsive, and the electronic viewfinder is fairly large and bright, with 100% coverage and 1.09% magnification. It certainly seems as though electronic

viewfinders are finally beginning to come of age, as the EVFs on the cameras in this shootout are excellent in terms of response time and brightness. A word of advice though, the eye sensor feels a little too sensitive. Just reaching across the viewfinder sets the sensor off; a little annoying that the LCD turns off all the time.

**+**  
**Most flexible articulating LCD display.**

**-**  
**Lots of color noise at higher ISOs.**



### AT A GLANCE

**Sensor**  
APS-C CMOS

**Megapixels**  
24.3

**Dimensions**  
142.6 × 104.2 × 80.9 mm

**Weight**  
647g

**Price**  
RM3,999



The articulating LCD on the A77 II is the most flexible, allowing you to view it from any direction.



Compared to the others, the multi-selector button on the A77 II is huge, and so the easiest to operate.



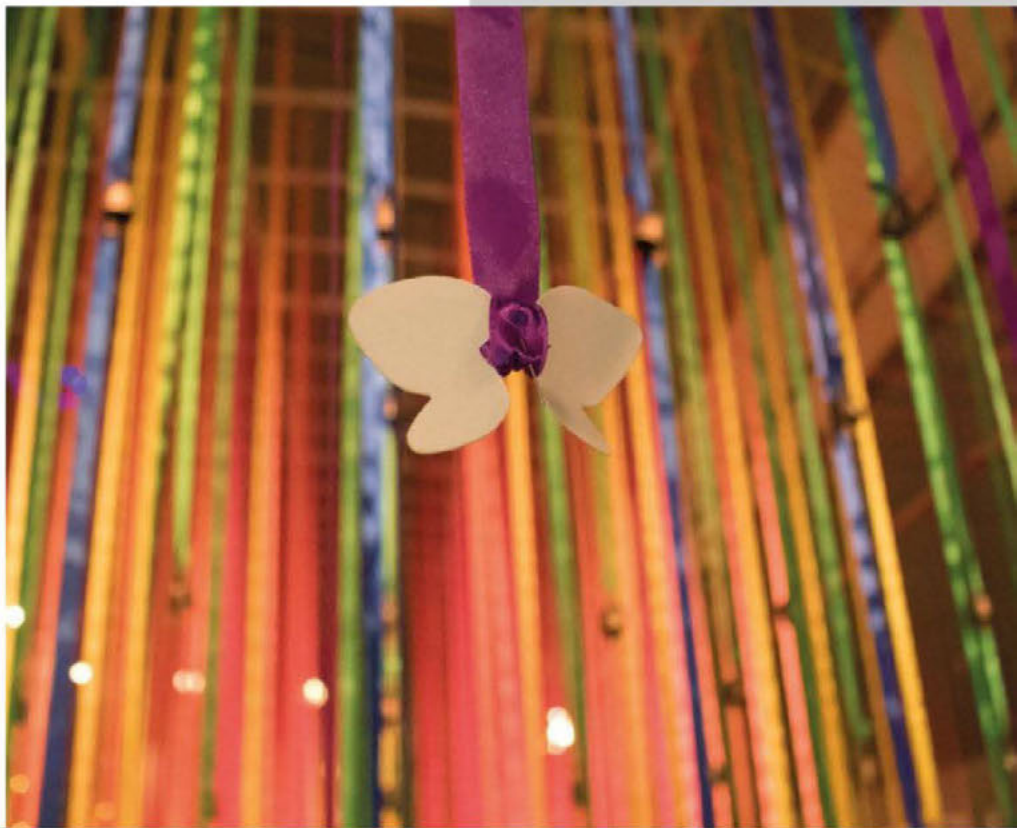
The A77 II features NFC for easy pairing.

## IMAGE QUALITY & PERFORMANCE - CANON EOS 7D MARK II

Images captured with the 7D Mark II hold detail well up to ISO 6,400, with images taken at ISO 12,800 usable after a bit of post-processing. Compared to the rest, the images from the 7D Mark II are slightly warmer with a bit more in the reds and yellows. Despite being the only camera of the group with a traditional reflex mirror, it didn't feel noticeably heavier or bulkier – proving that it's the total package of lens and body that counts when you're out taking pictures.

Conversely though, the 7D Mark II's response time didn't feel significantly faster than the mirrorless counterparts – specifically the FUJIFILM X-T1 and the Samsung NX 1 – so that's perhaps a sign of how far mirrorless cameras have come. Autofocus is snappy and accurate for stills and very much improved for video – Canon's Dual-Pixel autofocus system definitely seems to be worth the marketing hype – and the intelligent tracking seemed to work well most of the time.

One thing we did find though, is that seeing the shutter in the viewfinder when doing continuous shooting does seem a little more distracting compared to the uninterrupted view you get with mirrorless cameras, so that's one area where traditional DSLRs are at a slight disadvantage. In our own tests, the 7D Mark II managed an average of 10.73 frames per second, easily matching the reported burst rate (10 fps), with consistently accurate focus.



Color noise is handled fairly well even at the higher ISO levels.



Images are usable up to ISO 12,800.

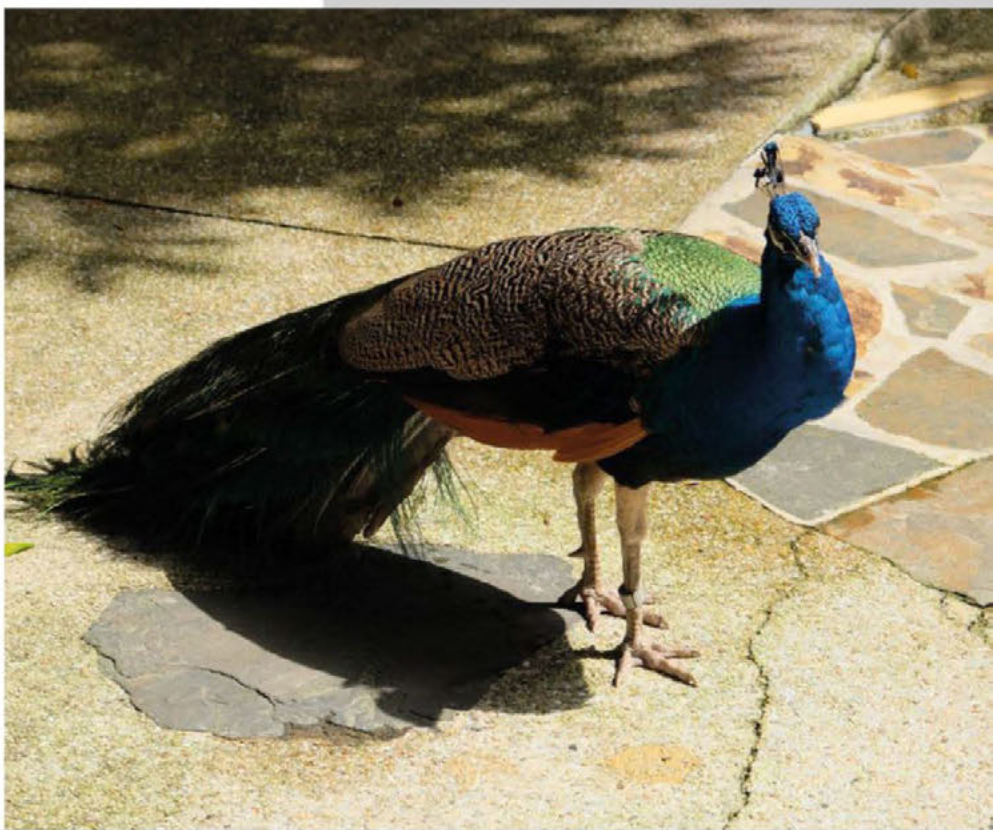


## IMAGE QUALITY & PERFORMANCE - FUJIFILM X-T1

We really like the responsiveness of this camera, and this shootout hasn't changed that impression. With the latest firmware installed, the X-T1 gains an electronic shutter function that goes up to 1/32,000s, and more importantly, operates completely silently, which helps immensely when trying to shoot wildlife. The smaller body also helped in that regard, as you imagine it's certainly easier sneaking up to a peacock with something that's less bulky!

Despite having the sensor with the lowest resolution (16.3-megapixels), the X-T1 produces images that are full of detail with rich vibrant colors, thus proving that a good image is not just all about the megapixels. Another advantage of having a lower pixel density on your sensor is of course, better control over noise, and this is certainly evident in the images. We'd say that images taken up to ISO 12,800 are readily usable, and even images at ISO 25,600 are printable after a bit of sharpening.

One thing we do have to note though, is that at ISO 25,600 and up (the X-T1 goes up to 51,200, accessible from the menus) images develop a slight green cast, which is especially noticeable in the shadow areas. The continuous shooting rate was the slowest of the bunch, at an average of 7 frames per second from our tests (it is officially rated at 8 fps), but the autofocus was accurate and reliable throughout.



The X-T1 produces sharp images with detail, proving that it's not all about megapixels.



The larger pixel pitch means even images taken at ISO 25,600 look good enough to print, especially after some sharpening in post.



## IMAGE QUALITY & PERFORMANCE - SAMSUNG NX1

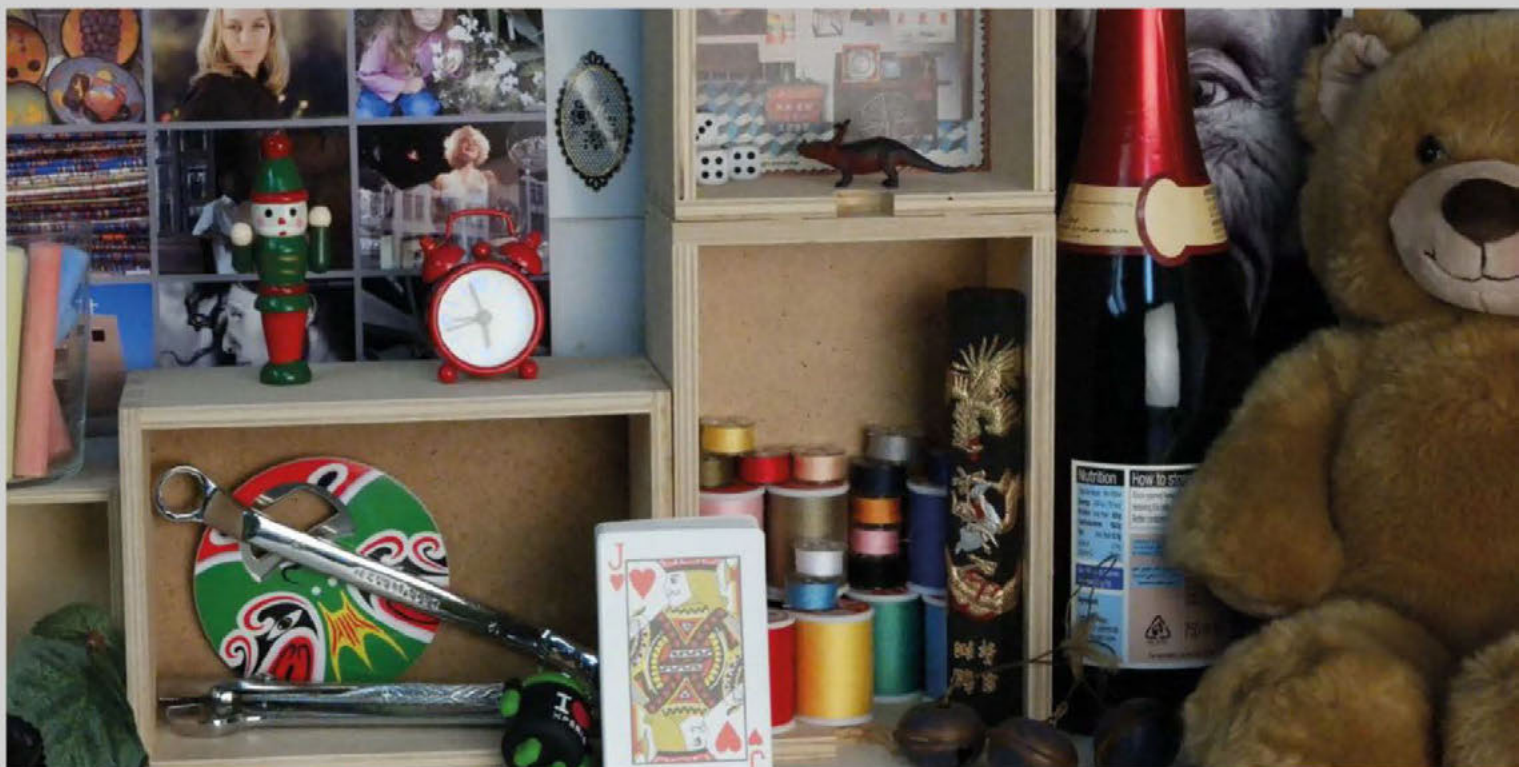
The Samsung NX1 was very much a pleasant surprise in terms of the sheer amount of features packed into the camera. Touch screen shooting, a flip screen for awkward angles, and a bright, responsive viewfinder that showed very little lag made for an extremely fun camera to use. Colors in the viewfinder and on the LCD were true to life, and we liked that there was room for adjustment of the brightness settings, though we were definitely comfortable with leaving it on automatic.

Autofocus is quick and accurate, and images captured display an impressive amount of detail – as to be expected perhaps as the NX1 has the highest resolution sensor of the group at 28.2-megapixels. The camera also has an impressive continuous frame rate of about 15fps when shooting with the electronic shutter enabled and a decent buffer that goes up to about 70 shots before slowing down. The continuous autofocus was by large fairly accurate, locking on to subjects pretty well, thanks in large part to the sheer number of autofocus points it has. (205 Phase detect AF points and 209 contrast detect AF points)

We do think that Samsung has been a bit too aggressive with their noise reduction algorithms though. Noise reduction starts to kick in from as low as ISO 3,200, and when you get to ISO 12,800 and above, the camera's attempts at noise reduction actually work against the high resolution of the sensor.



The 28MP sensor of the NX1 gets you plenty of detail.



Because of the over-aggressive noise reduction, the maximum you'll want to go up to with the NX1 is probably ISO 6,400.



## IMAGE QUALITY & PERFORMANCE - SONY SLT-A77 II

The bulkiest of the group, the SLT-A77 II felt like it was the heaviest and the most unwieldy for some reason. We think it's got to do with the design of the body, and the constant f/2.8 kit lens provided; something you can probably adjust to a certain degree by your choice of lenses.

SLT-A77 II has a fast AF system that generally performs well, focusing quickly and accurately in all the situations we put it through. The exposure system is accurate, and we never had to dial in any exposure compensation throughout the time we were using it. In our tests, the continuous shoot rate actually hit close to 13 frames per second, proving that Sony has perhaps rated it very conservatively, and making it one of the fastest cameras of the group.

Images at lower ISOs have plenty of detail, though we do notice bits of color noise starting to appear from as low as ISO 800. While the camera does go up to ISO 25,600, you'll want to stay below ISO 6,400, as color noise starts to become a real issue, and one that isn't easily cleaned up in post.

Despite that, the color balance on this camera is one of the best in this group, giving us accurate white balance with little bias even at higher ISO sensitivity settings no matter the environment we placed it in.



Color noise creeps in at ISO 800.



The maximum sensitivity we'd go up to with the A77 II is ISO 6,400.

# T E S T - APS-C CAMERA SHOOTOUT



MODEL	CANON EOS 7D MK II	FUJIFILM X-T1	SAMSUNG NX1	SONY SLT-A77 II
MOUNT	Canon EF/EF-S	FUJIFILM X	Samsung NX	Sony/Minolta Alpha
FOCAL LENGTH MULTIPLIER	1.6x	1.5x	1.5x	1.5x
SENSOR	CMOS	CMOS	BSI-CMOS	CMOS
SENSOR SIZE	22.4 x 15mm	23.6 x 15.6mm	23.5 x 15.7mm	23.5 x 15.6mm
EFFECTIVE PIXELS	20.2 megapixels	16.3 megapixels	28.2 megapixels	24.3 megapixels
ISO SENSITIVITY	100-16000 (expandable to 51200)	100-6400 (expandable to 51200)	100-25600 (expandable to 51200)	100-25600 (stills) 100-12800 (video)
MAXIMUM SHUTTER SPEED	1/8000s	1/4000s (mechanical shutter), 1/32000s (electronic shutter)	1/8000s	1/8000s
MAX CONTINUOUS FRAME RATE	10.0 fps	8.0 fps	15.0 fps	12.0 fps
FLASH	Yes	Yes (hotshoe flash provided)	Yes	Yes
MAX MOVIE RESOLUTION	1,920 x 1,080 60p	1,920 x 1,080 60p	4,096 x 2,160 (24fps)	1,920 x 1,080 60p
WI-FI	-	Yes	Yes	Yes
VIEWFINDER	Optical pentaprism, 100% coverage, 1.00x magnification	2.36 million-dot OLED color viewfinder, 100% coverage, 0.77x magnification	2.36 million-dot OLED color viewfinder, 100% coverage, 1.04x magnification	2.36 million-dot OLED color viewfinder, 100% coverage, 1.09x magnification
MONITOR	3" TFT LCD, approx. 1.04 million dots	3" tilt LCD, approx. 1.04 million dots	3" Super AMOLED with touch and tilt, 1.036 million dots	3" TFT LCD with tilt, approx. 1.229 million dots
BATTERY LIFE (CIPA)	670 shots	350 shots	500 shots	480 shots
SIZE	148.6 x 112.4 x 78.2 mm	129.0 x 89.8 x 46.7 mm	138.5 x 102.3 x 65.8 mm	142.6 x 104.2 x 80.9 mm (excluding protrusions)
WEIGHT (BODY ONLY)	820g	390g	550g	647g
	RM5,999	RM4,388	RM4,699	RM3,999

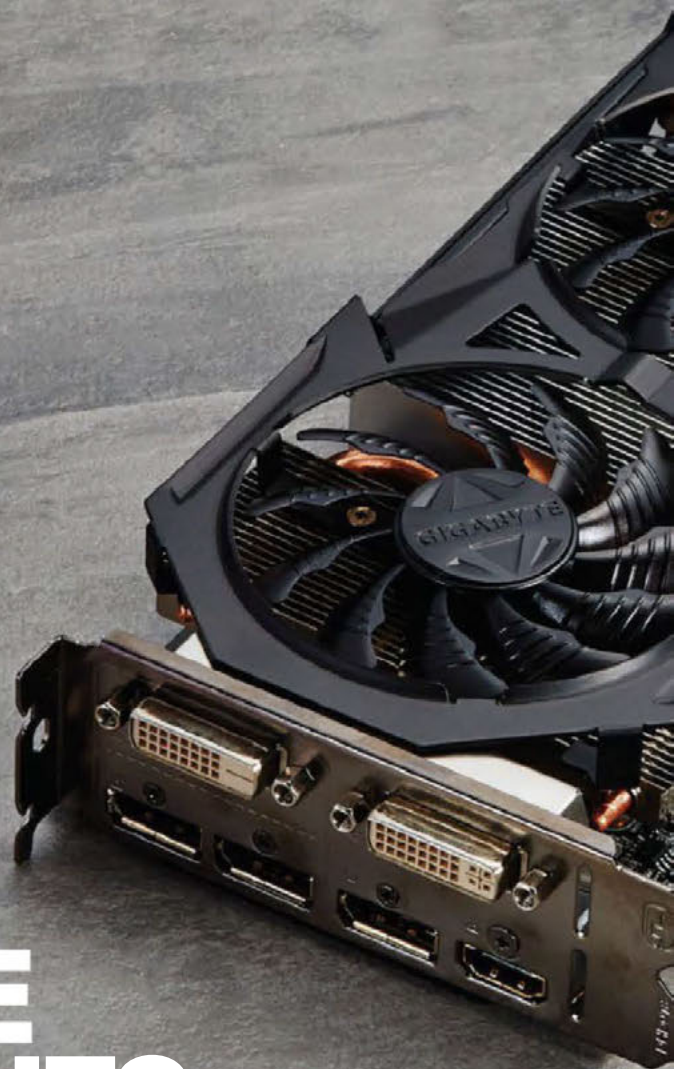


# THE BEST APS-C CAMERA IS



## THE FUJIFILM X-T1

We were very impressed by the X-T1 when we first reviewed it, and the recent firmware update has only added more features to be wowed by. While it doesn't have 4K video capabilities of the NX1 or the burst speed of the 7D Mark II and the SLT-A77 II, it is the most competent shooter at what matters most when you're looking for a camera. It doesn't have the color noise issues, overly aggressive noise reduction or overall bulk of the other cameras. Putting aside the fact that it is fully weather-sealed with a selection of weather-sealed lenses to go with, the X-T1 consistently got us results in all the lighting conditions we put it through. Images have good color, plenty of detail, and hold up well up to the higher ISO settings, which is essentially all you want from a good mid-range camera.



# BATTLE OF THE MIDDLEWEIGHTS

With the arrival of the Maxwell graphics architecture, NVIDIA's new GeForce GTX 900 series graphics cards have now taken up the mantle for the platform. In this shootout, we pitch three custom-cooled GeForce GTX 960 cards, and pit these mid-range graphics options against each other in a showdown of graphics, physics, and computational power.

Text by *John Law*  
Photography by *Robin*  
Art Direction by *Frederick Lim*





**vs**  
ASUS STRIX GEFORCE GTX  
960 OC EDITION

GIGABYTE GEFORCE GTX  
960 G1 GAMING

ZOTAC GEFORCE GTX 960  
AMP! EDITION





## ASUS STRIX GEFORCE GTX 960 OC EDITION

ASUS has a long history of producing some of the most interesting cards in the market, as well as more powerful variations of a given model. ASUS still uses its proprietary Direct CU II custom cooling technology, but nearing the end of last year, the company gave the card a new name for consumers to refer to, STRIX. To begin, the card has two modes that it switches between, Gaming Mode and OC Mode. On Gaming mode, the card's base clock is set at 1,228MHz, which has been tweaked to 1,291MHz. In OC Mode, the base clock is pushed to 1,253MHz, but runs at a boosted clock speed of 1,317MHz.

The memory modules that support the core GPU are clocked at 7,200MHz effective (meaning that the actual clock speed is 1,800MHz, multiplied by four), which is actually the same or faster than the speeds of the previous-generation Kepler-class GeForce GTX 700 series cards. Compared to the mid-range GeForce GTX 760, the GTX 960 runs on a smaller 128-bit memory bus bandwidth. This is because NVIDIA's Maxwell architecture runs more efficiently on less power, which also means that the new cards don't produce as much heat as they predecessors.

On the subject of heat, the card is kept cool via ASUS' Direct CU II cooling system, which has

been upgraded and improved upon since the last generation. As a matter of fact, ASUS is so intent on keeping their card cool, they have even gone the extra mile to fit it with a heatsink that is 220% larger than NVIDIA's reference cooler. It doesn't end there: the card is also equipped with a backplate to assist in overall cooling. Rounding off

the card's 'cool' factor is ASUS' Super Alloy Power components, which are supposedly able to run cooler and 2.5 times longer than normal components.

The card is quiet as well, thanks to the use of 0dB technology, which shuts off the fans the moment the temperature goes below 55°C. Another unique feature of the card is the LED indicator situated right below the 6-pin power port. This nifty LED shines red when the card is not connected properly, and white when it's done properly – a rather handy feature, we must say. Overclocking and tweaking the card is equally as simple, thanks

to ASUS' GPU Tweak software, which allows users to play around with the card's factory clock settings.

Connectivity-wise, the card features a DVI-Port, a HDMI port and three DisplayPorts, and allows for a total of four displays to be actively connected.

**+**  
**Extremely silent,  
even under heavy  
loads.**

**—**  
**Out-of-box  
performance  
is average, and  
overclocking  
potential is a missed  
opportunity.**



### AT A GLANCE

**Core Clock**  
1,228MHz  
(Gaming Mode)

**Memory**  
2GB GDDR5

**Memory Clock (DDR)**  
7,200MHz

**Price**  
RM999



ASUS still swears by the ever-popular and traditional heatpipe cooling method.



The new DCU II fans look very different.



Yes, this card is capable utilizing NVIDIA's FLEX display technology.



## GIGABYTE GEFORCE GTX 960 G1 GAMING

If we were to determine cooling power from the looks of the cooling system alone, then the Gigabyte G1.Gaming probably takes it right away. And that may well be the case indeed, with its three fans that are uniquely designed to reduce air turbulence and improve airflow by 23%, as well as reducing noise levels. Gigabyte touts the air cooling capacity of the G1.Gaming GeForce GTX 960 to be up to 300W, courtesy of its WINDFORCE 3X cooling system. Whether all of these hold up in our temperature tests, we will soon find out.

The WINDFORCE cooling system works not only to keep temperatures down, but noise as well, especially under light load. The fans begin spinning only after the GPU temperature rises above 62°C or when the GPU power goes above 60W. On the other hand, they only stop spinning after temperatures drop below 43°C and the GPU power drops below 32W. There are also LED indicators to tell you which state the fans are on, but if you don't really make use of it, it still serves a purpose as eye-candy, if anything.

As for general numbers, the G1.Gaming has its base core clock speed pushed up to 1,241

MHz, along with a boosted core clock speed of 1,304MHz to match. It comes with 2GB of GDDR5 memory, which operates at a 7,010MHz default clock speed. The card measures 295mm without the bracket, and comes with two 6-pin power connectors. You can use these for more stable

overclocking, since using both pushed the cooling power to 400W. The card also has 1,024 CUDA cores and has support for DirectX 12 and OpenGL 4.4.

The Gigabyte G1.Gaming GeForce GTX 960 also lets you put together a multi-monitor setup of up to four displays, as it comes equipped with seven video connectivity options. That's right, seven. Three of them are DisplayPorts, and you get one each of HDMI, DVI-I and DVI-D ports for all your multi-display needs. Connected display options will also be detected automatically with Gigabyte's Flex Display technology.

For those who would want to overclock, Gigabyte has made it easier for you to do so with the OC Guru II software. This utility will also be useful in helping you keep the drivers and BIOS up to date.

**+**  
**Quiet but powerful cooling solution, has overclocking potential.**

**-**  
**Size of card is comparatively larger than other GeForce GTX 960.**



### AT A GLANCE

**Core Clock**  
1,241MHz

**Memory**  
2GB GDDR5

**Memory Clock (DDR)**  
7,012MHz

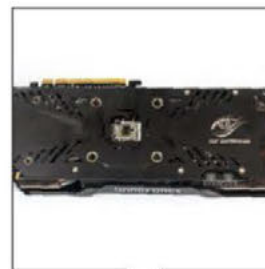
**Price**  
RM899



The G1.Gaming has all the digital ports to support your needs.



WINDFORCE cooling is the name of the game.



Gigabyte has taken to attaching backplates to their cards for added cooling and rigidity.

## ZOTAC GEFORCE GTX 960 AMP! EDITION

Zotac isn't a brand you'll hear very often in Malaysia, but believe us when we tell you that their graphics cards are actually a very popular choice among PC gamers and rig building enthusiasts in the North American region. Just like how Sapphire specializes in custom-cooled AMD cards, Zotac specializes in custom-cooled NVIDIA cards. At the point of purchase, the AMP! Edition of the GeForce GTX 960 actually comes in two cosmetic options: the card as a standalone option, or the card bundled with a copy of Metal Gear Solid V: Ground Zeroes. In addition to the latter option, the backplate of the card sports a decal of the game's artwork.

Like the majority of cards under their belt, Zotac's cooling solution features dual 90mm IceStorm fans that only begin to spin when the card goes above temperatures of 43°C, and only stops spinning when the card is idle, when the temperature drops below 59°C, or when the power consumption is lower than 13W. For further cooling enhancements, the card is also wrapped with Zotac's ExoArmor and a solid metal backplate that adds rigidity to the entire card – thus enhances its durability.

**+**  
Shows a lot of  
overclocking  
potential. Efficient  
operating  
temperatures,  
thanks to Freeze  
cooling technology  
and IceStorm fans.

**–**  
Single 6-pin  
connector means  
overclocking  
potential is limited.  
Also has a limited  
number of ports.

This GeForce GTX 960's 2GB core has a base clock of 1,266MHz, which has been boosted to 1,328MHz. Its memory clock is set at 1,753MHz, meaning that its effective memory clock speed

is set at 7,012MHz. Zotac also has an OC software of its own, known as Firestorm. The program is actually quite simplistic, and it allows you to save up to three different overclocking configurations at a time.

Despite its custom cooling credentials, the AMP! Edition card only has a single 6-pin power connector, which is both good and bad. It's good because it bears testament to NVIDIA's promise that the new Maxwell architecture consumes less power than previous-generation's Kepler. In other words, it's a card that can give the world and more, without using a lot of power. The bad part about having a single 6-pin connector means that there's no extra room for the card to be pushed beyond the overclocked speeds that we set, and to us, that's just wasted potential.

Also, the card only has a total of four ports, consisting of one HDMI port, a DisplayPort, and two DVI ports.



### AT A GLANCE

**Core Clock**  
1,266MHz

**Memory**  
2GB GDDR5

**Memory Clock (DDR)**  
7,012MHz

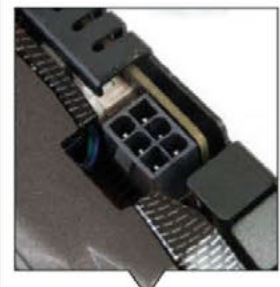
**Price**  
RM949



This special edition card has a specially painted backplate.



Zotac's own cooling technology is known as Freeze, and it uses special IceStorm fans.



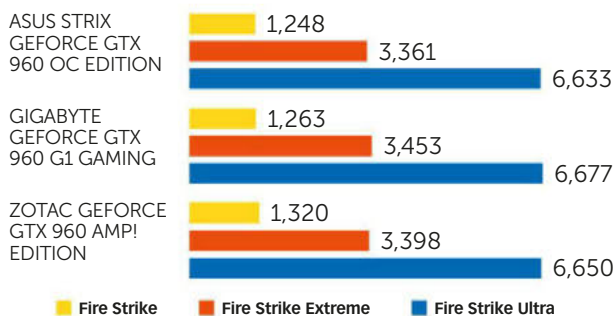
It may only use a single 6-pin connector, but it's still a pretty power-hungry card.



## 3DMark (2013)

(3DMarks, higher is better)

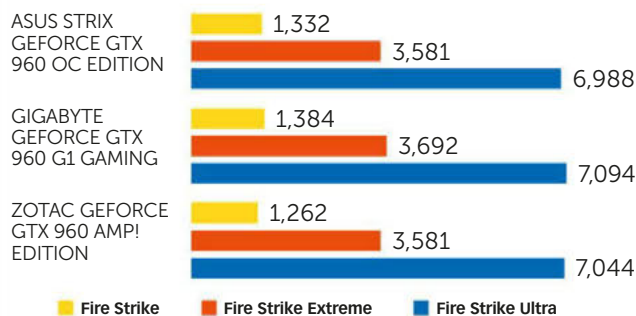
Untouched and out of the box, all three cards seem to churn out the same benchmark scores across the board. While it's only a minor gain, as it's easy to see that the Gigabyte G1.Gaming takes the lead in this race, with Zotac's own card following a close second.



## Overclocking

(3DMarks, higher is better)

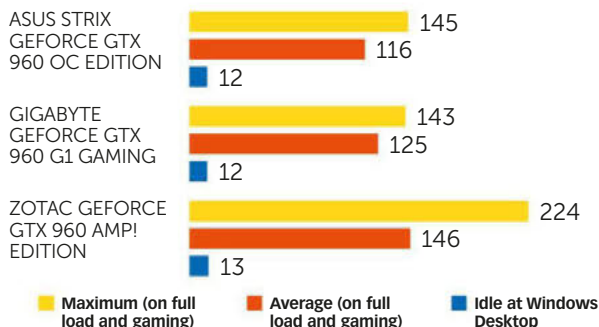
The story of performance changed dramatically once we began to overclock the cards. Across the board, we managed to push the GPU and memory speeds up by a comfortable 120MHz for all the cards. Of the lot, the Gigabyte G1.Gaming was the card that showed the most improvement in performance.



## Power Consumption

(Watts, lower is better)

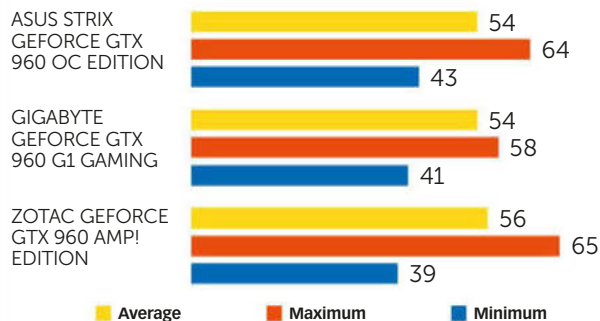
Zotac's card was by far the most power-hungry card of the three, whereas the Gigabyte and ASUS cards hovered around the 140W range at maximum power. The Zotac card still managed to consume a maximum of 224W, which is rather alarming, given that it's the only card in this shootout with a single 6-pin connector.



## Operating Temperatures

(Degree Celsius, lower is better)

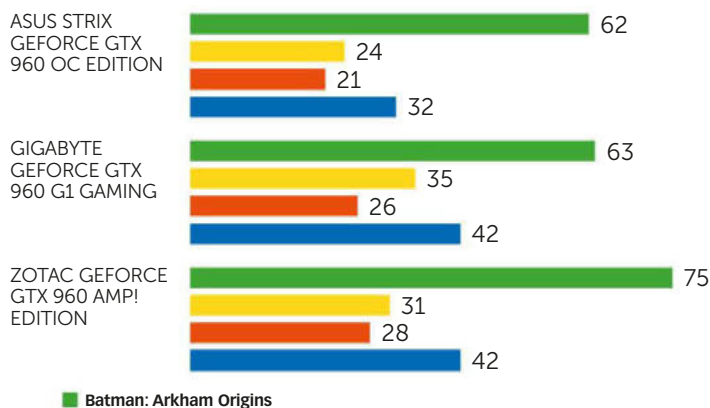
Gigabyte's G1.Gaming was the card that took the title in overall cooling and efficiency. Thanks to its WINDFORCE cooling system, as well as the use of three fans (instead of two), we could have actually pushed the card a little further for its performance. ASUS' STRIX comes in at second place, not just for its cooling efficiency, but also for its silent operation.



## Real-World Performance

(Average FPS, higher is better)

The results that we received from the real-world performance benchmarks were a little more surprising. We initially thought that the Gigabyte G1.Gaming would be the card to pull ahead of the other two. Instead it was Zotac's AMP! Edition that actually managed to impress us with its performance. The card showed better overall performance, and even better consistency in the frame rates in comparison to the other two cards.





MODEL	ASUS STRIX GEFORCE GTX 960 OC EDITION	GIGABYTE GEFORCE GTX 960 G1 GAMING	ZOTAC GEFORCE GTX 960 AMP! EDITION
CORE CODE	GM206 (28nm)	GM206 (28nm)	GM206 (28nm)
GPU TRANSISTOR COUNT	2.94 billion	2.94 billion	2.94 billion
CORE CLOCK SPEED	OC Mode Base Clock: 1,253MHz Boost Clock: 1,317MHz  Gaming Mode Base Clock: 1,228MHz Boost Clock: 1,291MHz	1,241MHz (Boost Clock: 1,304MHz)	1,266MHz (Boost Clock: 1,329MHz)
STREAM PROCESSING UNITS	1,024	1,024	1,024
TEXTURE MAPPING UNITS (TMU)	64	64	64
RASTER OPERATOR UNITS (ROP)	32	32	32
MEMORY	2GB GDDR5	2GB GDDR5	2GB GDDR5
MEMORY CLOCK SPEED (GDDR5)	7,200MHz effective (1,800MHz)	7,012MHz effective (1,753MHz)	7,012MHz effective (1,753MHz)
MEMORY BUS WIDTH	128-bit	128-bit	128-bit
MEMORY BANDWIDTH	115GB/s	112GB/s	112GB/s
PCI EXPRESS INTERFACE	PCIe v3.0 x16	PCIe v3.0 x16	PCIe v3.0 x16
VIDEO PORTS	1x DVI-I, 1x HDMI, 3x DisplayPort	1x Dual Link DVI-I, 1x DVI-D, 1x HDMI, 3x DisplayPort	1x Dual Link DVI, 1x HDMI, 3x DisplayPort
HDCP OUTPUT SUPPORT	Yes	Yes	Yes
PRICE	RM999	RM899	RM949



# THE MOST OUTSTANDING GEFORCE GTX 960 CARD IS



## GIGABYTE GEFORCE GTX 960 G1 GAMING

The Gigabyte G1.Gaming variation of the GeForce GTX 960 is by far the most efficient and most reliable card we tested in the shootout. While it handled well being overclocked by an additional 120MHz (on top of the manufacturer's own factory overclocking), the card was still capable of running at clock speeds as high as 150MHz without a hitch. What's even more surprising is that despite it being the only card in the shootout that required more power to run (due to its dual 6-pin connectors), it still consumed less power than Zotac's AMP! Edition GeForce GTX 960. So, if you're looking for a midrange GeForce that's bang for your buck, go for this card.



## AT A GLANCE

**Processor**

Intel Core i7-4710HQ  
(2.5GHz, 6MB cache)

**Display**

15.6-inch Full HD  
(1,920 x 1,080 pixels)  
Glossy IPS touchscreen

**Graphics**

NVIDIA GeForce GTX  
860M (2GB GDDR5)

**Memory**

8GB DDR3L

**Price**

RM5,499



HP's color customization software allows you to customize the keyboard, speakers, power button and shortcut keys' colors.

# IF LOOKS CAN WIN AT GAMING

## HP Omen

The new Omen is nothing like its distant desktop ancestor. It's a sleek black gaming laptop with smooth edges and a very angular design. Its 15.6-inch Full HD (1,920 x 1,080 pixels) IPS display packs a hidden surprise for gaming notebooks - a touchscreen, a rarity among gaming machines. In fact, it's the first gaming laptop we've reviewed this year that has one.

Unlike most notebooks, which go for a smooth finish, the HP Omen is textured with teeny squares, giving it a bumpy feel as you run your hand over it. Besides looking unique, it has an added benefit of being easier to grip. It's a little heavier than your standard sub-2kg slim gaming

notebooks such as MSI's GS60 series, but this is because its entire chassis is crafted out of aluminum. As a result, it is extremely solid with a premium feel unmatched by its rivals.

If there's one thing the HP Omen does very well, it's aesthetics. The stylish (and subdued) red lighting that emanates from the rear exhausts is a far cry from the garish lighting on some of the notebooks we've reviewed. The metal bar that serves as a hinge is also unique in that the sides are discolored, reminding us of the burnt titanium exhaust tips often seen on high-end aftermarket exhaust systems for exotic supercars.

The display is surprisingly

robust and although glossy, is rather smudge resistant, which is great if you do use it as a touchscreen. The only issue we have is its limited viewing angles. However, when viewed straight on, images are sharp with vibrant colors.

Like nearly every other notebook in existence today though, the HP Omen uses a conventional chiclet-type keyboard, sans a numpad. It does have a set of customizable gaming keys, but like the Logitech G910 keyboard (which also has keys in similar placements), some of the lower keys can be tough to hit accurately. Experience-wise, we didn't notice much (if any) difference in feel from a regular chiclet-type keys and as such, shares my same





The textured chassis of the OMEN gives it a great look.

#### CONCLUSION

**The OMEN has one of the best notebook designs we've seen, but look elsewhere for gaming performance.**

#### SPECIFICATIONS

**OS** Windows 8.1 64-bit // **Storage** 128GB M.2 SSD // **Warranty** 2-years (local, includes 1-year limited international) // **Contact** Hewlett-Packard Sales (Malaysia) Sdn Bhd // **Telephone** 1 800 88 4889 // **URL** [www.hp.com.my](http://www.hp.com.my)

disdain. Namely, they're too shallow and aren't really that great for typing, let alone gaming.

There are some compromises when companies constantly try to make slimmer and sleeker notebooks, and one of that for the OMEN is the lack of a physical LAN port. Now as a gaming machine, this alone might just make you cry foul, but luckily, HP does bundle a USB LAN adapter. Of course, using it means giving up a precious USB port, so it could still be a problem for you.

HP gets a lot of things right with the OMEN. It stands apart from its contemporaries as a modern take of a gaming machine. The design and effort gone in its construction was something that really took us by surprise. We really didn't think this RM5,499 notebook could feel and look so good. To be honest, we expected plastic, not the sleek, svelte aluminum build the OMEN

showed up in.

However, something had to give and unfortunately, the compromises come from some middling hardware choices. The main concern is its use of a previous generation NVIDIA GeForce GTX 860M GPU, while just about everyone else have already refreshed their lineup to the GTX 900-series. Its battery life is also rather lackluster, lasting around 98 minutes in our benchmarks.

This isn't to say that the GTX 860M has no bite left; it still delivered a reasonably playable 36fps average on Shadow of Mordor on High at 1080p, but only 28fps on Ultra. In comparison, the cheaper ASUS G751JT that comes with a GTX 970M more than doubles the OMEN's frame rates at 77fps on High and 55fps on Ultra with the same settings.

The OMEN is a decent attempt from HP at being serious about taking on the

gaming market. Its high build quality and attractive design will sit well with a target audience that have been spoiled by the likes of MSI, Gigabyte and Razer that have gone to prove that gaming notebooks can also be slim and sexy. All said and done though, the HP OMEN is unfortunately letdown by its choice of last year's hardware and less than ideal power consumption.

by Salehuddin Husin

TESTED & RATED

**7.0**<sub>/10</sub>

**HWM**  
MALAYSIA



## AT A GLANCE

**Macro Buttons**  
9**Cable**  
Fixed, 1.82m**Dimensions**  
210 x 505 x 35.5mm**Weight**  
1.5kg**Price**  
TBA

Logitech claims their new Romer G switches can withstand up to 70 million presses.

## CONCLUSION

**Great keyboard but some ergonomic and app issues detract from the overall quality.**

## SPECIFICATIONS

**Switch Type** Romer G // **Key Switch**  
**Durability** 70 million // **Others** 16.8 million  
colors for customizable lighting, dedicated  
media controls, 113 key anti-ghosting,  
Arx Control integration // **URL** gaming.  
logitech.com

# NOT PERFECT BUT NEARLY THERE

## Logitech Orion Spark G910

The Logitech Orion Spark G910 full-fledged mechanical gaming keyboard comes with all the bells and whistles expected, plus a couple of extras thrown in for good measure. Constructed from plastic, the keyboard is light enough to lug around yet sturdy and secure enough (thanks to its sizable rubber stops) to not move around during 'chaotic' gaming sessions. It interfaces via USB with the wire fixed to the top of the keyboard. Unlike some other mechanical keyboards, the G910 unfortunately doesn't have other USB ports so it can't function as a USB hub.

The keyboard uses a new type of switch Logitech calls Romer G, though to call it simply a switch type is a bit misleading. Instead, think of Romer G as a whole system. Its main function is, of course, that of a mechanical switch but it also encompasses other aspects of the keyboard's design. The asymmetrical keycap design on the

keyboard is entirely new, developed for the Romer G, as is the lighting system.

Still, as unique as the Romer G keys, they don't feel that much different from generic Cherry MX Brown keys. That may or may not be a good thing depending on your preference, but Logitech might be on to something with its unique construction. The hollow center for the Romer G keys gives a cleaner and brighter backlight to shine through the key markings. We also love the shape of the key caps that guide the fingers in. The shortcut and customizable keys also won us over, despite some positional quirks of the G3 - G5 keys.

Its keyboard also has a fancy sounding feature called an Arx Dock, which is basically a pull-out cradle to rest a smartphone/tablet running its companion Arx Control app. The app is supposed to offer second screen-like functionality to the keyboard and supported games, but at time of testing, was more

trouble than it's worth.

Ergonomically, our biggest concern is the back legs, which do not offer sufficient elevation for long periods of gaming. We soon felt discomfort in our wrists and expect other users might run into the same problem.

In the end, if you want to try something new, the Logitech Orion Spark G910 is worth considering. It's priced decently for what it offers. As a keyboard, it feels good and offers lots of customization, which is great for any gamer who needs a setup that meets his or her exact needs; even for specific games.

by Salehuddin Husin

TESTED &amp; RATED

8.5/10

HWM  
MALAYSIA



DIR-816L

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# FEATHERWEIGHT WORKHORSE

## Lenovo Yoga 3 Pro

When we reviewed the Lenovo Yoga 2 Pro early last year, we were deeply impressed by its overall performance and flexibility. Fast forward a year and we have the Yoga 3 Pro, the third iteration of Lenovo's line of Yoga convertible Ultrabooks.

For starters, the Yoga 3 Pro now comes with a more reassuring six aluminum and steel hinges, as opposed to the two on the Yoga 2 Pro. On top of that, the Yoga 3 Pro is lighter and thinner as well, weighing in at a negligible 1.2kg with a thinness of 12.8mm.

But sadly, just like its predecessor, the Yoga 3 Pro does not come with an Ethernet port. This omission can be a little inconvenient if you are prone to being plagued by unreliable Wi-Fi hotspots.

The 13.3-inch QHD+ (3,200 x 1,800) IPS multi-touch display of the Yoga 3 Pro is beautifully bright, vibrant and sharp. With a pixel density of 271ppi, it is nearly impossible to discern the individual pixels even if you deliberately hunt for them. Also, the multi-touch screen is very receptive to your touch. We did not notice any input lag while making quick, abrupt swipes through the Windows 8.1 interface.

The backlit keyboard of the Yoga 3 Pro is enjoyable to use and is built sturdy enough to negate any form of keyboard flex. Taking us by surprise is the palm rest area's uncanny ability to keep their cool even when the laptop was running strenuous benchmarks back-to-back. This is very impressive for an ultra-slim device that does

not have any ventilation fans whatsoever.

To find out what the Yoga 3 Pro's Broadwell-based Intel Core M-5Y70 chip and its accompanying Intel HD Graphics 5300 GPU are capable of, we made them tackle the usual PCMark 8 and 3DMark 11 benchmarks.

The Yoga 3 Pro managed to attain a score of 1,698 and 2,110 respectively for the PCMark 8 Home and Creative suites, while the Work suite that we used to gauge its battery life showed that the Yoga 3 Pro can last for three hours and 48 minutes. In 3DMark 11, the Intel HD Graphics was clearly struggling to handle the pressure of the Cloud Gate benchmark, judging by the unimpressive 2,401 score it produced. Needless to say, you shouldn't be expecting to do much gaming on the Yoga 3 Pro.

All in all, it is easy to recommend the ultra-portable Yoga 3 Pro – especially to professionals who are constantly on the go. It is extremely light, it has a tack-sharp display that is pleasant to look at all day long, and it does a commendable job of handling most productivity-related tasks. Just make sure you know where the reliable Wi-Fi hotspots are.

by Peter Chu

### AT A GLANCE

#### Dimensions

300 x 228 x 12.8 mm

#### Weight

1.19kg

#### GPU

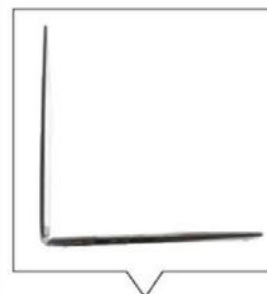
Intel HD Graphics 5300

#### OS

Windows 8.1 (64-bit)

#### Price

RM4,299



Step aside MacBook Air, this is what the side profile of the Yoga 3 Pro looks like.

### CONCLUSION

**We like the Yoga 3 Pro for its fantastic display and svelte physique, but we would love it if it had better performance and an Ethernet port.**

### SPECIFICATIONS

**CPU** Intel Core M-5Y70 // **Audio** Integrated JBL speakers with Waves Audio certification // **Display** 13.3-inch QHD+ (3,200 x 1,800) IPS multi-touch display // **Memory** 8GB dual-channel DDR3L 1,600MHz // **Storage** 256GB SSD // **Warranty** 2-years // **Contact** Lenovo Technology Sdn Bhd // **Telephone** (03) 7681 8000 // **URL** [www.lenovo.com/my](http://www.lenovo.com/my)



TESTED & RATED

**8.5**<sub>/10</sub>

**HWM**  
MALAYSIA

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# TOTAL VISUAL CONTROL

## BenQ XL2430T

### AT A GLANCE

#### Size

24-inch

#### Display Type

LED

#### Response Time

1ms (Gray-to-Gray)

#### Resolution

1,920 x 1,080

#### Price

RM1,699



Adjustment options are plenty here.

### CONCLUSION

While certainly pricey, the BenQ XL2430T comes with many features that put comfort, as well as performance, as a priority.

### SPECIFICATIONS

**Pixel Pitch** 0.276mm // **Brightness** 350 cd/m<sup>2</sup> // **Aspect Ratio** 16:9 // **Contrast Ratio** 12,000,000:1 // **Viewing Angle** 170° horizontal / 160° vertical // **Dimensions** 520 x 568 x 199 mm // **Warranty** 3-years (with on-site pick-up service) // **Contact** BenQ Service and Marketing (M) Sdn Bhd // **Telephone** (03) 7954 7800 // **URL** www.benq.com.my

When it comes to the equipments we use with our PC, we have the standard ones used by everybody, and then we have gaming gear; the kind that's more responsive, more durable and more ergonomic than those used by the general public. That was, once upon a time, true only for input devices, but now more and more PC hardware have come into the market with gamers in mind. Monitors have also joined in the fray, and this time, we take a look at BenQ's XL2430T gaming monitor.

At this point, you might be thinking: "What? Gaming monitors? They are mere screens! Why would there be gaming-grade monitors?!" While that is true, perhaps it would be more appropriate to say that everyone, not just gamers, needs gaming-grade monitors.

So let's take a look at what the BenQ XL2430T brings to

the table that other monitors don't. First is the technology in the display itself. We have a 1ms (gray-to-gray) response time, Motion Blur Reduction technology, as well as refresh rates of up to 144Hz, as well as BenQ's unique Low Blue Light mode and Flicker-free technology. Put all these together and you can avoid having strained eyes from staring into the screen for too long.

Moving on to the rest of the monitor, we have a pivotable stand that you can turn 45-degree towards the left or right. This is here because the stand itself is pretty heavy – to prevent it from being tipped over whenever someone accidentally bumps into the monitor or desk – and you wouldn't want to have to lift the whole thing to get it into position. What's more, there are movable markers to help you get the monitor into position

again if it does go a little off. There is also a height adjustor that lets you move the monitor up or down for 14 cm, and there's a corresponding marker here as well. You can also tilt it up and down for a total of about 25-degree. All these give you total control of the monitor's position, and combined with the wizardry of the display, alleviate some of the causes of Computer Vision Syndrome (CVS).

The BenQ XL2430T is a monitor that truly puts your comfort as a priority, which is especially needed by gamers who spend most of their waking hours in front of a PC screen. The cost of all this, however, may be about half of a decent gaming rig, so it doesn't come cheap, to say the least.

by Ian Chee



TESTED & RATED

8.5/10

HWM  
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## AT A GLANCE

**Standards**

802.11 ac/n/g/b/a

**Ports**

1x RJ45 WAN, 4x RJ45 LAN, 1x USB 2.0

**Antenna**

2x External

**Frequency**

2.4GHz and 5 GHz

**Price**

RM299



The buttons and ports of the TP-Link Archer C2

## CONCLUSION

**The Archer C2 performs admirably. It's easy to get it up and running, and it comes with an affordable price tag. What's not to like?**

## SPECIFICATIONS

**External Power Supply** 12V DC/1.5A // **Transmit Power** CE: <20dBm (2.4GHz), <23dBm (5GHz) FCC: <30dBm // **Operating Modes** Wireless router // **Warranty** 2-years // **Contact** TP-Link Distribution Malaysia Sdn Bhd / AdvanceNet Technology Sdn Bhd / Lab Seven (M) Sdn Bhd // **Tel** (03) 8964 1922 / (03) 8070 3633 / (03) 8075 8811 // **URL** www.tp-link.com.my



# SMOOTH OPERATOR

## TP-Link Archer C2

It's not an overstatement to say that the majority of home users are not entirely concerned about having a top-of-the-line router that boasts outlandish speeds and an expansive feature set. To them, it's more about having a wireless router that works as it should without incurring any drama – which is where the TP-Link Archer C2 comes in.

Unfortunately, just like its cousins – the Archer D2 and the D5, the Archer C2 comes with a chassis that sports a glossy surface. It's not all that bad this time around though, as its unique textured weave design helps to diminish the appearance of fingerprints and grime, albeit only to a small extent. Another niggle that we have with the Archer C2 is its absurdly tiny and unevenly

lit LED indicators, which are incredibly difficult to decipher, unless you get really up close and personal with them.

Situated at the rear of the Archer C2 are its two external antennas, and between them is the usual offering of ports and buttons. The list includes a power socket, a power on/off button, four Ethernet LAN ports, a WAN port, a special wireless on/off button, a WPS-cum-reset button and a USB 2.0 port – the last of which allows you to connect a hard drive or a printer and enable them to be accessed wirelessly across the network.

It only took us a couple of minutes to get the Archer C2 up and running. It was a very simple affair too – all we needed to do was to follow the easily understood step-by-step quick

installation guide that came bundled with the router. For advanced users, you can go about tinkering with the Archer C2's multitude of network settings by accessing them through a web browser.

To gauge the wireless prowess of the Archer C2, we made it perform our standardized file-transfer test. This involved wirelessly transferring a 1GB file from a server to a notebook PC at distances of five, 10 and 20 meters and timing how long they take to complete the transfer.

We opted to use the Archer C2's 5GHz wireless band for the test and suffice to say, we were pleased with the results. At a distance of five meters, the file transfer took a brisk three minutes and 19 seconds while at 10 meters, the transfer took four minutes and six seconds. Finally, the 20-meter file transfer took a slightly longer but still **respectable five minutes and 16 seconds.**

by Peter Chu

TESTED &amp; RATED

# 8.5<sub>/10</sub>

## HWM

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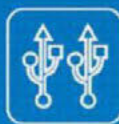
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#### AT A GLANCE

##### Type

5.1 3D Blu-ray Home Theater

##### Total RMS

1,000W

##### Frequency Response

150 - 20kHz (speakers),  
20 - 150Hz (subwoofer)

##### Remote

Yes

##### Price

RM959



There's a LAN port for users to connect to online video streaming services.

#### CONCLUSION

**If you're thinking of getting a compact home theater system that's not a soundbar, the HTB3520 has everything you want (and more).**

#### SPECIFICATIONS

**Subwoofer** 1x 8-inch // **Loudspeaker** 1x center speaker, 4x satellite speakers // **Connectivity** NFC, Bluetooth, USB, AUX-in, HDMI out, 3.5mm in, Ethernet // **Dimensions** (W x H x D) 435 x 58 x 28 mm (main unit), 100 x 192 x 125 mm (speakers), 230 x 370 x 310 mm (subwoofer) // **Warranty** 1-year // **Contact** Woxx Innovations // **Telephone** 1 800 88 0180 // **URL** www.philips.com.my



# 'BOMB'-ASTIC HOME THEATER

**Philips HTB3520**

With the space-saving nature of soundbar, most homeowners are likely to go for this type of speaker system simply for its below-the-TV form factor. Of course, you can't really compare its surround sound performance with that of a traditional home theater system. However, to enjoy this manner of immersive experience usually means having to contend with a bulky setup. Philips is hoping to dispel said notion with the HTB3520 – a 5.1-channel 3D Blu-ray Home Theater System with a smaller footprint and wireless possibilities.

As a whole, the HTB3520 comes with four satellite speakers (two front, two rear), a center speaker, main 3D Blu-ray Disc player unit, and an 8-inch subwoofer – each adorned in a sleek, black design. The satellite speakers contain the same midrange and bass driver units. As for the center speaker, there are two driver units and a small tweeter in the middle. All in all, a great example of a versatile, minimalist design.

The essential playback controls are relegated to the main unit, though more can be found with the included remote. Connectivity-wise, there's a USB

port, 3.5mm audio jack for non-NFC devices, and a microphone jack on the front, while the rear contains the usual plethora of HDMI, coaxial, and optical options. On the wireless front, the HTB3520 has Bluetooth and one-touch NFC built in, as well as a slot for the optional wireless rear audio module for those who wish to make the two rear satellite speakers wireless.

In terms of performance, we tested out its audio prowess with our favorite playlist, and one of the songs that gave us that 'wow' feeling was Day One Dark by Hans Zimmer. The track sounded very crisp and clear, as we were able to discern the instruments from each other. When it comes to movies, the subwoofer did a commendable job too, as it delivered enough low frequency goodness to match the onscreen action. Same goes to surround sound; the movies that we played on the HTB3520 took full advantage of the 5.1-channel configuration by filling up the room with incredible high-definition sound.

Since Philips claimed the HTB3520 has what they coined as 'Powerful Cinematic Surround Sound', we also

tested its surround sound capability by playing a climatic scene from Michael Bay's Transformers. The sound intricacy of Optimus Prime's truck transformation sequence was deftly recreated on each of the five satellite speakers. Furthermore, with built-in support for Dolby TrueHD and DTS-HD Master Audio Essential, the audio reproduction is rendered more accurate, though the bass level also seemed more dominant in some of the more explosive action scenes, but we managed to keep things under control by adjusting it remotely.

By Ammar Uzair Aminuddin

TESTED & RATED

**8.5**<sub>/10</sub>

**HWM**  
MALAYSIA

Available at

**PLAZA LOW YAT**



#### AT A GLANCE

##### Type

Portable Speaker

##### Total Power Output

20W Input

##### Bluetooth

4.0 / 3.5mm / NFC

##### Remote

No

##### Price

RM999



There's the power port to get itself charged, and there's the USB port to charge something else.

#### CONCLUSION

**It may not have a subwoofer, but the Porto V makes up for that with its two powerful speakers.**

#### SPECIFICATIONS

**Speakers** 2x 10W satellite speakers,  
// **Connectivity** Bluetooth 4.0, NFC,  
1x 3.5mm in/out, USB port for charging  
// **Battery Life** 8 hours playback (6  
hours effective) // **Warranty** 1-year  
// **Contact** Leapfrog Distribution Sdn  
Bhd // **Telephone** (03) 7803 6703 //  
**URL** www.elysiumlab.com

# BARENAKED ACOUSTIC

## Elysium Porto V

At this point, we believe that it's not necessary to give you, our readers, a soliloquy of how portable speakers have become a staple and norm in the lives of the person on the go. It's a convenient piece of technology, and it's safe to say that we've tested a few good ones. Last month, we tested the Elysium Porto VII and loved it for many reasons. For this issue, we test out its brother (or sister, depending on how you view it), the Porto V.

One of the most obvious things that the Porto V lacks in comparison to the Porto VII is a subwoofer. Instead, Elysium simply slapped on two speakers to it, and that was it. Also, you'll be able to tell that the Porto V only has two speakers on it, because unlike its more premium cousin, Elysium had forgone the luxury of a speaker grill at the front of the Porto V.

One (of many) factors that still remains the same on the Porto V is its size. Drawing reference from the Porto VII once again, it's become quite clear to us that Elysium has a

pendant for manufacturing portable speakers with a little bit of heft to it. The Porto V measures in at about the same size as the Porto VII, which is about the size of a industrial-grade first aid kit. To carry it around though, Elysium has been more than kind to, once again, fit this speaker with a nice solid handle at the top.

Because it's portable, it's got a built-in battery inside which, during our testing, gave us close to eight hours of continuous play before powering down completely. This was with our volume levels set at a comfortable 65 percent.

Connectivity-wise, the type of options are still the same as the Porto VII, which include NFC and Bluetooth 4.0, a 3.5mm jack for you to connect your music players physically, and a USB port for charging your devices, which is useful in a pinch and you desperately need to charge your device.

Because of the lack of a subwoofer, it was quite obvious that the Porto V was catered to the audiophile who favor music with mid-range and high-range

itches, as well as songs that are filled with vocals as well. Playing Yoko Kanno's Diggin' My Potato and Joni Mitchell's A Case of You, we heard no breaking from the speakers, but found that the overall experience sounded a bit flat. On the high registers, the Porto V was actually quite impressive, with audio precision in pieces like Luigi Boccherini's Concerto No.5 sounding sharp, accurate, and rather precise with the instruments.

By John Law

TESTED & RATED

**9.0**<sub>/10</sub>

**HWM**  
MALAYSIA

Available at

**PLAZA LOW YAT**



# A WHOLE NEW LEVEL OF EFFICIENCY

Meet one of the newly revised AMD FX processors, the FX-8320E

by John Law

A little over a year ago, we got a chance to experience with AMD's FX-9590 processor, the company's most powerful eight-core CPU on the current market, and also the equivalent to Intel's own Extreme processor line. It proved to many skeptics then that AMD had not forgotten their fans and that they still had the gamers' heart in mind. The processor was, in a word, powerful, but not without its flaws. In that time since then, the company has kept themselves busy developing other processors, such as this AMD FX-8320E processor.

## A NEW TAKE ON OLD POWER

While the FX-9590 dominated AMD's circuit as the semiconductor's most powerful CPU-only processor, there were actually a couple of drawbacks with the processor itself. For starters, the CPU's TDP was set at 220W, which – when you compare to the company's APU line and its direct competitor's low-wattage CPUs – is a little on the high side. The second problem laid within its Turbo Boost 3.0 function, which allowed it to be automatically overclocked from 4.7GHz to a whopping 5GHz. While it did show a difference in performance numbers, the sheer amount of power needed to feed the FX-9590 was so great, the remaining components and our 1,200W PSU couldn't actually support it.

The FX-8320E is actually one of two AMD's new low-power FX octa-core processors that were announced back in September last year, with this CPU being the lower-tier of the two. To make things clear, the 'E' in its namesake denotes that the processor actually stands for 'Energy-Efficient.' It's still based off AMD's 32nm Piledriver 'Vishera' architecture, but thanks to innovation and technology (obviously), the FX-8320E has a TDP of 95W, which is a dramatically lower number when compared to 220W.

Like all processors, one interesting factor of the FX-8320E is how AMD has allowed the CPU to be relatively and aggressively overclocked without exceeding its preset 95W TDP parameter. On paper, the FX-8320E has a base clock speed of 3.2GHz, and 4GHz when overclocked.

But like all AMD FX processors, the chief attraction of its CPUs (or graphics cards, even) has, and always will be the price. The FX-8320E is an Extreme-class processor, yet on the market, it only costs US\$146.99 (approx. RM526). That's very affordable, when you consider the fact that even Intel's lowest range Extreme processor would still cost more than double that price.







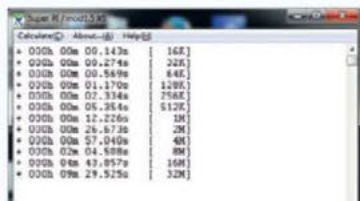
To test the FX-8320E, we used MSI's 970 Gaming AM3+ motherboard, courtesy of AMD as well.

The benchmarks we ran in order to stress-test the CPU were PCMark 8's Home and Creative suite, PCMark 7, and Super Pi. We tested the CPU in two separate speeds: one at its base clock of 3.2GHz and the second at 4GHz. At its base clock, the FX-8320E produced an average score of 4,352 for the Creative test, and 3,478 for the Home test. These scores are actually par for the course, but when we overclocked the CPU up to 4GHz, we expected the processor to actually benefit from the speed boost.

Unfortunately, even at its boosted clock speed, the difference in performance wasn't that much. At 4GHz, the FX-8320E only managed to score 4,459 on the Creative test and 3,637 on the Home test, which as we've mentioned, isn't a very sharp increase in performance at all.

On PCMark 7, the section of the test that we were interested in was the Computation scores. The FX-8320E scored 7,729 and 7,858, both from the base and boosted clock speeds, respectively. Again, you'll notice that there isn't much of a difference in performance, but the scores are considerably higher than what the FX-9590 achieved previously. For Super Pi, we conducted the test with the CPU at 4GHz, and observed that the FX-8320E's fastest calculation was at 0.143 seconds for 16 thousand calculations, and the longest it took was nine minutes and 29.5 seconds for a 32 million calculations.

In order to test it out for real-world applications, we ran Crysis 3 with the resolution at 1,920 x 1,080, all graphics settings set at the highest, with anti-aliasing set at 2x MSAA. The system's frame rates hovered at 43 FPS, but we did notice the occasional dip down to a minimum of 4 FPS, but physics and CPU seemed smooth and displayed no bottlenecking.



This is still clearly a processor that is meant to perform.

## ALL ABOUT EFFICIENCY

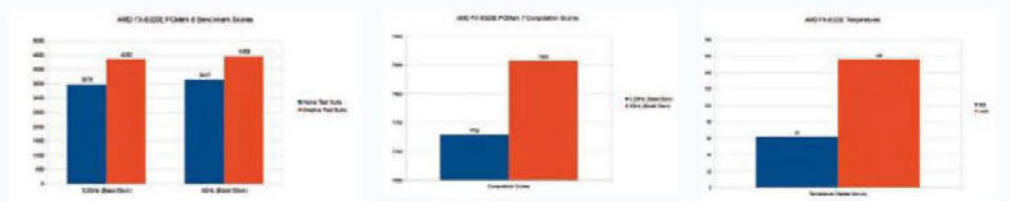
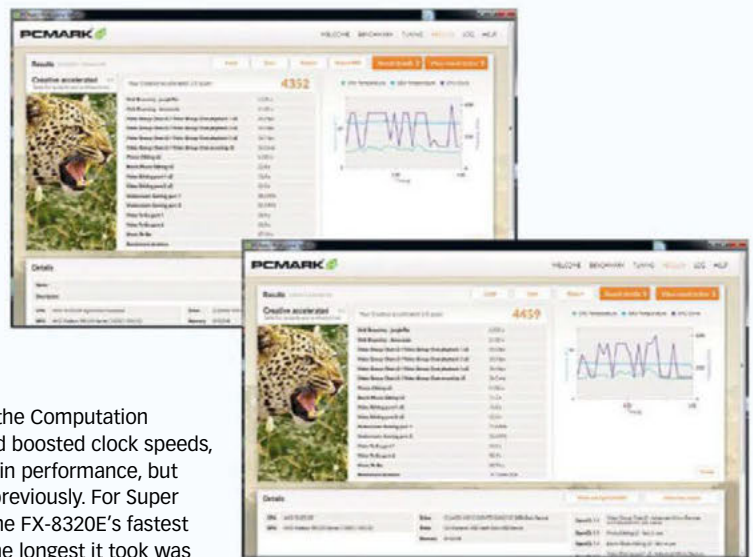
We've talked a fair bit about the new FX-8320E's physical appearance and price point, so let's talk what you can expect for RM500. On paper, this is what the FX-8320E looks like:

- 32nm Vishera Architecture
- 8x x86 cores
- 3.2GHz base clock / 4GHz Boost Clock
- 95W TDP (with a 125W parameter for overclocking)
- Turbo Core 3.0
- Socket AM3+
- AMD 970 chipset

To run our performance tests on the processor, we used a new AMD testbed, which we've listed below:

- MSI 970 Gaming AM3+ motherboard
- Apacer 16GB 2,133MHz Thunderbird RAM
- Gelid GX-7 Silent Cooler
- ASUS STRIX R9 285 2GB graphics
- Corsair RM1000 PSU

You'll notice that the motherboard we're using isn't actually our own, and that's because it's been awhile since we last tested an AMD-based processor, and our previous motherboard had long ceased to function on its own. Therefore, AMD was kind enough to provide us with a brand new AM3+ motherboard from MSI.



## CONCLUSION

The FX-8320E, in a sense, stands as testament that AMD has actually been pulling its weight in the year since the company released its top-of-the-line FX-9590. Its energy efficiency is leaps and bounds better than before as well, using only just a little more than a third of what the FX-9590 used. Had we actually had a better cooler at our disposal, it's would've been guarantee that we would've managed to push it past the 4GHz barrier.

TELEPORT

# GO BORDERLESS

Samsung GALAXY Note Edge reviewed.

MORE  
INSIDE>

## CURTAIN CALL

Sony is officially closing down PlayStation Mobile for Android app.

## WEARABLE RACE

Apple Watch officially goes on sale this month.

## SMALL IN NAME ONLY

We reviewed the Xiaomi Mi Pad.

## KEEPING DRONES IN CHECK

NASA testing new air traffic control for drones.



110  
UNLOCKED





## JOHN LAW

Mobile Adventurer Extraordinaire

Smartphones or tablets, it doesn't matter. When not occupied with watching a YouTube video or movie on his mobile devices, this man is busy trying some newly designed app from the Google Play Store or simply just chatting away on whatever social media app that is currently being used. On top of that, you can also see him making gestures at his desk while listening to classical music on his favorite radio app.

## SMARTPHONES & TABLETS

When it comes to smartphones and tablets, we prefer letting our readers know how the devices we review appeal to us in terms of performance, design, features and other aspects such as battery life, usability and its overall value. To test these devices we replace them with our own daily use devices and use them as we would any smartphone or tablet.

As for Android based devices, we use a trio of benchmarks to gain a more tangible idea of their performance and these include:



- AnTuTu Benchmark: At the moment, AnTuTu is one of the best benchmarks

as it is a complete package that gives us an all-round hardware test that includes the likes of Memory Performance, CPU Integer Performance, 2D and 3D Graphics Performance, SD Card Read/Write Speed and more.



- Quadrant Standard Edition: Ever since Quadrant was released, it has

become a staple in the arsenal of smartphone and tablet reviewers as it provides a comprehensive set of tools that test the performance of a device's CPU, I/O and 3D graphics.



- Epic Citadel: We reserve Epic Citadel for devices that fall in the high-end and mid-range categories as this benchmark

truly shows the capabilities of a device's GPU. Powered by the critically acclaimed Unreal Engine 3, Epic Citadel features effects such as Global Illumination, Dynamic Specular Lighting with Texture Masks, Vertex Deformation, Skeletal Animation, etc.

## MOBILE NETWORKING



Mobile networking devices such as 3G/4G dongles and MiFi devices are fast becoming hot commodities as our appetite for data consumption continues to grow. Depending on the device type, here are the two tests we commonly use to gauge their performance:

- For devices capable of sending and receiving data packets such as a mobile router with a LAN port, we use our standard 1GB file transfer test at various ranges to see how stable and fast the connection is.
- As for devices that rely on a mobile operator's signal strength such as MiFi devices, we test them around the Klang Valley to provide you with a better picture of the service as a whole. For devices like these, we also rely on the Speedtest.net application or website to discover its Download, Upload and Ping rates.

## ACCESSORIES

To gauge the performance and features of accessories such as docks, speakers, Bluetooth headphones and wired headphones, we use our standard audio testing suite which lets us know just how well a device handles music from different genres. We normally play audio tracks from various sources and in various formats but we usually rely on a few artists which include:

- Yoko Kanno
- Joanna Wang
- John Mayer
- Jon Bon Jovi
- Nightwish

If the device has a microphone or works as a speakerphone, we also test it by making actual phone calls. After all our tests, we then explore other areas such as stress-handling, usability, design and value.



# APPLE JOINS THE WEARABLE RACE

Apple Watch Officially Goes on Sale This Month



The Apple Watch will be available starting this month in selected countries.

■ The Apple Watch is the new wearable from the Cupertino company, and quite frankly, it's a beautiful looking piece of technology. Furthermore, it will soon be yours to own, starting this month in selected countries.

The Apple Watch is actually the first new device to be announced by Apple in the last five years. It was first unveiled back in September 2014, and the whole world went mad for it, with good reason. At a glance, the Watch looks and feels premium. Jony Ive, Senior Vice President of Design, said that the future of Apple lies within the invention and refinement of devices, such as the Apple Watch.

Obviously, the Apple Watch will only work together with an iOS device, and there hasn't been any announcement from Apple themselves on whether or not they intend to allow their new wearable to be paired with non-Apple devices in the future. The watch itself will perform many functions that already exist on other wearable devices, such as displaying notifications from a phone, and even taking calls directly, making you seem like a secret agent when you answer them.

The Apple Watch will come in three editions, each with two sizes: Apple Watch Sport, Apple Watch with a stainless steel case, and Apple Watch Edition. The Apple Watch Sport will cost US\$349 (approx. RM1,291) for the 38mm and US\$399 (approx. RM1,476) for the 42mm. For the Stainless Steel Case Edition, prices are set at US\$549 (approx. RM2,031) and US\$1,049 (approx. RM3,881). Finally, the Watch Edition, which comes with an 18k gold case, will cost US\$10,000 (approx. RM37,000) for the 38mm and US\$17,000 (approx. RM62,900) for the 42mm.

## BYTES

### HTC Announces Leadership Changes for South Asia

HTC officially appointed Jack Yang as the new president of the company's South Asia operations, along with Sirpa Ikola as its new senior director of marketing for South Asia. "Jack and Sirpa bring proven track records in product planning and execution, and they have the knowledge, depth and experience needed to lead the HTC in one of our most important markets during this period of rapid technology and industry change," said Peter Chou, CEO of HTC. Prior to joining HTC, Jack Yang was the head of iPhone and iPad sales in Southeast Asia for Apple Inc.

### Samsung Pay Makes Mobile Payment Easier

Samsung announced last month that it has launched its new mobile payment service, Samsung Pay. Similar to Apple Pay or Google Wallet, Samsung Pay allows consumers to make transactions and payment through their mobile devices and NFC. Samsung has partnered with major payment networks, MasterCard and Visa, in order to make this feature a reality. "Samsung Pay will reinvent how people pay for goods and services and transform how they use their smartphones," commented J.K. Shin, CEO and Head of IT & Mobile Communications Division at Samsung Electronics.

### iPhone Explodes in Owner's Pocket

Another year, another story of an iPhone exploding in the pocket of an unfortunate individual. Last month, reports came in that an iPhone 5c belonging to a man named Eric Johnson had exploded inside his pant pocket, which caused some rather severe burns, which obviously warranted a week-long stay in a hospital. "I was literally jumping up and down trying to get the phone out of the pocket, but I think the phone melted my pockets shut, so I couldn't get into it and I had to rip my pants off and throw the pants to the side," Johnson said. He plans to sue Apple for the injuries sustained.



# CURTAIN CALL FOR PS MOBILE

Sony is Officially Closing Down PlayStation Mobile for Android App

■ 2014 was an annus horribilis for Sony, and the beginning of 2015 hasn't been as smooth sailing as they would've hoped. Last month, the Japanese corporation finally announced to its fanbase that the PlayStation Mobile for Android app will be shut down, permanently.

Sony cited that the decision wasn't an easy one to make, but its inability to generate any substantial form of profit since it was launched years before was one of the many driving factors in the closure

of the service. Don't be alarmed though, as the service isn't terminated with immediate effect, but instead, it will officially cease its operations on September 10 this year. After that, you won't be able to buy or even re-download any games that you previously purchased using the service. While the shutting down of this service may not affect the majority of Android users, PlayStation Mobile's absence will visually and effectively hurt PS Vita owners, as they too will not be able to re-download or

purchase any new games directly to their gaming handheld.

Sony initially dropped support for PlayStation Mobile on Android back in 2014, but the decision to close it down completely displays the lack of support and a poor adoption rate. Another reason for the platform's failure was an exceeding lack of triple-A titles. Sony had instead chosen to focus on releasing the more popular PSone titles, along with other indie titles.



# REVENGE A DISH BEST TWEETED DIRTY

Twitter is Clamping Down on Errant Users Who Post Revenge Nude Tweets

■ Last month, we reported on how Twitter CEO Dick Costolo admittedly said that he and his company “sucked” at dealing with the massive number of trolls that frequent the social networking service.

However, there is one issue that they have been tackling and working extremely hard at, and that is to restrict unscrupulous individuals from tweeting posts that could possibly be revenge nude pictures. More specifically, the company has launched more stringent rules against the act, a point that they have outlined clearly in the community rules and abuse policy. Under the Content Boundaries and Use of Twitter, it states:

“Private Information: You may not publish or post other people’s private and confidential information, such as credit card numbers, street address or Social Security/National Identity numbers, without their express authorization and permission. You may not post intimate photos or videos that were taken or distributed without the subject’s consent.”

It doesn’t end there either. Under the abusive behavior policy, it states:

“Users may not make direct, specific threats of violence against others, including threats against a person or group on the basis of race, ethnicity, national origin, religion, sexual orientation, gender, gender identity, age, or disability. In addition, users may not post intimate photos or videos that were taken or distributed without the subject’s consent.”

Twitter’s action against the act is a welcoming bit of news, especially after the U.S. courts recently deemed a revenge porn site to be illegal, and subsequently had the site administrator and creator arrested for his actions, finding him guilty on the grounds that he illegally distributed pictures without the consent of the subject, and also for extortion.



Dick Costolo, CEO of Twitter, and his company are tackling another problem: Revenge Nudes.

# GETTING STICKY WITH IT

Viber and Talenhouse Looking Out for the Next Sticker Design

■ Social networking and messaging apps are abound on the mobile world, and the one thing that sets them apart from one another are its functions and features. More specifically, one of the features that tend to attract users is the specially designed and custom-made stickers.

Viber knows this, and for the last month or so, had been working with a company called Talenhouse so that they may discover the talent who could very well design the next sticker set for the Viber app. The project is called ‘Sticky Fingers’. Viber said that participants can design emoticons they want, with the sky being the limit in how their design looks. The condition, however, was that the artists come up with something original, capable of conveying emotions, and can be used in day-to-day Viber conversations. On top of that, all the characters must have eyes and a friendly face as well.

Winners of the contest earn the privilege to work with Viber’s very own Design Studio and have their characters transformed into full-size commercial stickers that were then distributed on Viber. The sticker packs are sold on the Viber Sticker Market, and the winner will receive a share of the profit with every sticker pack sold.

VIBER'S  
**STICKY  
FINGERS**

CREATE. FREELY.



Viber held a contest to find an artist who could best design a new sticker set for them.



# AN EDGY WAY TO GO

## Samsung GALAXY Note Edge

Back in 2013, Samsung introduced the world to the Youm flexible display. To be fair, the technology at the time wasn't revolutionary, but it was obvious from that point on that the company intended to implement the new screens into smartphones in time. Mercifully, we didn't have to wait too long, as Samsung went on to launch the GALAXY Note 4 and the Note Edge, the latter being the phone that had been given the privilege of the new display.

At this point, we will simply assume that the majority of our readers have at least held or even played around with the GALAXY Note 4. In that context, we can also tell you

that if you do own a GALAXY Note 4, then you're not missing out on much with the GALAXY Note Edge. In fact, the only (and obvious) factor that sets this phablet apart from the Note 4 is the 5.6-inch display's curved edge. The hardware of the Note Edge is identical to the Note 4: same quad-core Snapdragon processor, same amount of RAM, even the same 4G LTE connectivity and antennas (for more on the hardware, you can check out the specifications provided in this review).

Obviously, the focus of this review is that curved side of the phone. Believe it or not, Samsung has actually gone through great pains in order to get it to be useful (part of

TAP FOR  
GALLERY

the 'design with a purpose' philosophy that they are so proud of saying). As you would expect from a Samsung phone, the Note Edge is loaded with features that revolve around that curve. When the screen is turned off, you can make it display the temperature, date, time and news, simply by rubbing your finger across the edge (almost as though you were rubbing a magic lamp).

You can even customize its appearance, and even create a label that lets people know who the device belongs to. To add a little bit of flair, you can simply take the S Pen out and start creating a doodle or signature unique only to you, making it appear every time you turn the phone on.

To be clear, we had already expected the Note Edge's performance to be no different from when we actually tested out the Note 4. We ran our usual benchmarks of 3DMark, PCMark, AnTuTu, Quadrant and Epic Citadel. The scores obtained were 19,755 on 3DMark's Ice Storm Unlimited test, 3,978 on PCMark, 47,745 on AnTuTu, 24,625 on Quadrant, and an average 42 FPS on Epic Citadel.

by John Law

TESTED & RATED

8.5<sub>/10</sub>

HWM  
MALAYSIA

Available at

PLAZA LOW YAT

### AT A GLANCE

#### Network

4G LTE (Dual SIM)

#### Camera

16MP (Rear) / 3.7MP (Front)

#### Display

5.6-inch QHD Super AMOLED

#### OS

Android 4.4 KitKat

#### Price

RM2,999



That is one sexy curve.

### CONCLUSION

**The GALAXY Note Edge is the first phone that we can clearly classify as different and, to an extent, innovative.**

### SPECIFICATIONS

**Processor** 2.7GHz Qualcomm Snapdragon 805 // **GPU** Adreno 420 // **Multimedia** Audio: aac, amr, m4a, mp3, wav, asf (version 9 and 10) // Video: 3gp, 3g2, mp4, m4v, asf, wmv, H.263, H.264 (version 9 and 10) // **Connectivity** 3.5mm stereo audio, microUSB 2.0, Wi-Fi IEEE 802.11 a/b/g/n, Bluetooth 4.0, NFC // **Memory** 3GB RAM, 32GB internal storage, expandable microSD slot (up to 128GB) // **Colors** Black, White // **SIM Type** Micro-SIM // **Dimensions** 151.3 (L) x 82.4 (W) x 8.3 (T) mm // **Weight** 174g w/ battery // **Battery** 3,000 mAh Li-Ion (non-removable) // **Warranty** 1-year // **Contact** Samsung Careline // **Telephone** 1 800 88 9999 // **URL** www.samsung.com/my



# SMALL IN NAME ONLY

## Xiaomi Mi Pad

Xiaomi has become a brand that almost everyone wants a product of, be it the smartphones or powerbanks. Now, there is another device class in which it seeks to dominate: tablets. And it attempts this with the Xiaomi Mi Pad.

Like most of other Xiaomi devices, the Mi Pad is superb on the inside, but not so much on the outside. While it doesn't hurt your eyes when you look at it, the Mi Pad looks like you might hurt it if you held it a little too tightly and sneezed. Fortunately, it feels much sturdier than it looks but on the flip side, it is as much as a fingerprint and smudge magnet. It is also very slippery to hold unless your hands are always dry and you wipe the grime off the Mi Pad fairly frequently.

The Mi Pad has a 7.9-inch IPS multi-touch display with a resolution of 2,048 x 1,536 and 326 ppi. The viewing experience is great when you are reading or watching videos, and the MIUI v6.3.1 over the Android 4.4.4 makes the experience in-between said activities almost as pleasurable. That said, its iOS-Android hybrid nature would mean that it might take a while to get used to, even if you're familiar with either already.

TESTED & RATED

**8.5**<sub>/10</sub>

**HWM**  
MALAYSIA

Available at

 **PLAZA LOW YAT**



While there is no SIM card option – and all the benefits it brings – there is the option for expandable storage in the form of a microSD card slot. The issue with this is that you'll need a pin to access the tray, much like in the way you need a pin to access the SIM card of certain smartphones.

In terms of specifications, you get an NVIDIA Tegra K1 SoC, 2GB worth of RAM and 16GB of internal storage. Battery capacity is at 6,700mAh and the whole device weighs 360g.

With the NVIDIA Tegra K1, you can expect the performance to be quite speedy. Running synthetic benchmarks consisting of 3DMark's Ice Storm Unlimited,

PCMark' Work Suite, and AnTuTu, the Mi Pad acquired scores of 26,194, 5,193 and 48,851, respectively. The battery lasted pretty well too, clocking seven hours and 46 minutes of continuous use before it finally ran out of juice.

To sum everything up, expect really good value for money from the Xiaomi Mi Pad as far as performance is concerned. There are a few quirks here and there – like one where you have to factory-reset the device to change locations – but if you can live with them, then this is probably the tablet that gives you the most bang for each buck you pay for.

by Ian Chee

### AT A GLANCE

#### Operating System

Android 4.4.4 with MIUI v6.3.1

#### Display

7.9-inch, 2,048 x 1,536 pixels resolution, IPS display

#### Storage

16GB, expandable with microSD (up to 128GB)

#### Camera

8MP with backside illumination, 5MP secondary camera

#### Price

RM799



Wonder who thought this was a good idea?

### CONCLUSION

**Xiaomi's Mi Pad, like all its other brethrens, provides a balance in performance and price, with compromises on its exterior build.**

### SPECIFICATIONS

**Battery** 6,700mAh // **Processor** NVIDIA Tegra K1 (32-bit) // **Memory** 2GB // **Dimensions** 135.4 x 202.1 x 8.5 mm // **Weight** 360g // **Warranty** 1-year // **Contact** Xiaomi Malaysia // **Telephone** 1 800 281 182 // **URL** www.mi.com.my

## AT A GLANCE

**Operating System**

Android 4.4.2 KitKat w/ Q Home UI

**Display**

5-inch HD (1,280 x 720) IPS wide viewing angle

**Storage**

16GB (expandable to 32GB via microSD)

**Camera**

Rear: 13MP with auto-focus and LED flash, Front: 5MP

**Price**

RM499



This is the side profile of the B502 all 6.9mm of it.

## CONCLUSION

**The BenQ B502 is one of those rare midrange phones that serve as a genuinely accurate representation for the phrase 'most bang for your buck'.**

## SPECIFICATIONS

**Color** White, Black // **Processor** 1.3GHz ARM Cortex-A7 Quad-Core // **GPU** 500MHz ARM Mali-400 MP2 // **Multimedia** Audio: AAC, AAC+, AMR, AWB, MP3, WMA, Vorbis, FLAC, APE Video: H.264, MPEG4, H.263, VP8, VP9, VC1, DivX4, 5, 6, XVID, HEVC // **Connectivity** WLAN 802.11 b/g/n, Bluetooth 3.0, 3.5mm audio jack, USB 2.0 // **RAM** 2GB // **Dimensions** 144 x 69.7 x 6.9 mm // **Weight** 125g // **Warranty** 1-year // **Contact** BenQ Service & Marketing (M) Sdn Bhd // **Telephone** (03) 7954 7800 // **URL** www.benq.com.my

# A BEN-TASTIC DEVICE

## BenQ B502

With a remarkable thinness of just 6.9mm and a weight of 125g, the BenQ B502 is inarguably the supermodel of the smartphone world. But apart from having a figure that is begging to be admired, is there anything else about the B502 that is worth raving about?

For starters, if we had to pick out one component of the B502 that we particularly adored, it would have to be its 5-inch HD (1,280 x 720) IPS wide angle display. While it might not be a full-fledged Full HD display, we are still willing to praise it for its sharpness and ability to reproduce vibrant yet

accurate colors. As a matter of fact, the B502 has one of the best displays we've seen on a midrange phone.

Hardware-wise, the B502 comes with a MediaTek MT6582 chipset that accommodates a 1.3GHz quad-core Cortex-A7 processor and a 500MHz Mali-400/MP2 GPU. This hardware combination isn't necessarily the latest or greatest, but when it comes to real-world performance, it's more than enough to deliver a smooth experience overall. We managed to effortlessly breeze through the entirety of the phone's Q Home UI without having to heave a heavy sigh

and wish that the phone was equipped with better hardware.

Next up is the camera. The B502 has a 13.1-megapixel rear camera, which does a respectable job of capturing quality images. Photos taken by the camera are sharp, clear and showcase pretty decent color reproduction without any noticeable noise issues. The same can't be said for the front-facing camera though, as it tends to take grainy and fuzzy images even under decent lighting conditions.

If performance benchmarks are your thing, the B502 managed a score of 2,054 in 3DMark, 2,072 in PCMark, 6,932 in Quadrant, and finally 18,782 in AnTuTu. For the discerning reader, you probably would have noticed that these numbers are not exceptional in any way, which you would be right. Then again, it isn't necessarily bad either, once you consider that these numbers are coming from a midrange phone.

As a whole, if you can overlook the B502's benchmark scores and judge its worth based on its actual performance in the real world, you will find that the B502 is most certainly a commendable midrange phone. It has a beautiful display, a solid rear-camera, and most importantly, sufficient performance to deliver a fuss-free user experience – all for a price that does not break the bank. You would have to do some serious nitpicking if you intend to find any nagging problems with this phone.

by Peter Chu



TESTED & RATED

**8.5**<sub>/10</sub>

**HWM**  
MALAYSIA

Available at

**PLAZA LOW YAT**



#### AT A GLANCE

##### Wireless Sync

Yes

##### Operating System

Via Android and/or iOS device

##### Display

None

##### Wrist Band Size

140 – 176mm (small), 161 – 209mm (large)

##### Price

RM388



Two straps for wrists of different sizes.

#### CONCLUSION

**With the Fitbit Flex, keeping track of our activity was easy, albeit a little too accurate.**

#### SPECIFICATIONS

**Bluetooth** Bluetooth LE (Low Energy) // **Battery** 60-hours working time // **Input** None  
// **Warranty** 1-year // **Contact** Ingram Micro Malaysia Sdn Bhd // **Telephone** (03) 7952 8188 // **URL** www.fitbit.com

TESTED & RATED

**8.5**<sub>/10</sub>

**HWM**  
MALAYSIA

Available at

**PLAZA LOW YAT**

# NOT SO STANDARD FLEX

Fitbit Flex

Whether you wear a smartwatch or just a fitness band, the bottomline is this: wearables are back in the game, and this time, they're here to stay, albeit still having a few kinks here and there for manufacturers to find and fix. Fitness bands, in particular, have slowly but surely been picking up momentum in the realm of fitness. So then, how does the Fitbit Flex stack up to the vast majority of its competitors?

Like the rest of the fitness bands that are out in the market, design simplicity is the driving force behind the creation of the Flex. You've

heard us say this time and time again about products with the same design language, and we're going to say it again with the Flex: there is nothing garish or outstanding in its design.

The Flex comes in solid color options, and our version of solid black looked plain, but very sleek. Even when you put it on, you just don't feel that you've got a fitness band wrapped around your wrist.

As with the designs of other fitness bands, the Flex's fitness sensor is a little device that can be popped in and out of the included bands. On that note, the Fitbit Flex is always packaged with two bands of

different sizes. The one that we used was the larger one, but if your wrists are actually smaller (than this writer's, for that matter), you can always switch it out.

Testing the performance of any fitness band essentially boils down to its battery life and accuracy, and we didn't spare the Flex our stringent criteria. On a full charge, the Flex actually impressed us by lasting a little over a week (more specifically, nine days), before prompting us for a recharge. Compared to other fitness bands on the market, we can safely say that the Flex definitely pulls ahead in terms of battery life, all without breaking a sweat.

As a sidenote, you can keep track on how much you've worked out by downloading the Fitbit app. The app allows you to monitor the number of steps you've taken in the day, the calories you've burnt, and even your current heart rate. However, you can also monitor your progress via the five blinking lights that flash on the Flex's wrist band.

The Flex's fitness accuracy is something of a hit and miss. It's a hit because when you're active, it actually logs your activity throughout the day quite accurately. The miss, however, is its sensitivity. Even when we weren't active and just sitting at our desk and typing out some work, the Flex still logged in the activity from our wrists as full-blown activity.

by John Law



# KEEPING DRONES IN CHECK

NASA Testing New Air Traffic Control for Drones



NASA has been testing out the new drone pilot rules set out by the country's FAA.

■ Drones. They're now the 'big boy' toys that many people have been rushing to obtain. Because of the high demand, drone manufacturers have been increasing their supply for these machines, which in turn, have made them more affordable to the common folks. Sadly, with its widespread availability, it's become clear that many drone owners have displayed a great deal of reckless abandon, using them to spy on others, and in the process of doing so, intrude into the private airspace of other individuals.

In the U.S., the country's FAA (Federal Aviation Administration) recently laid down a set of rules for drone pilots. One of the rules listed was that drone pilots would fly their drones within line of sight, which means flying it around the corner to secretly spy on their neighbor is considered an offense.

NASA is one of the many government bodies that have been testing these new air traffic control rules, all with the help the U.S. Aerospace company, Excelis. The company has been working together with NASA in order to develop and build their software, which currently allows their drones to beams information directly to the FAA's mainframe.

This isn't NASA's first time dabbling in drone technology. Nearing the end of 2014, the aerospace agency was actually working with several companies, in hopes of building a system that would allow them to monitor drones that flew at altitudes below 125 meters. By the looks of it, it seems that the project was successful, so it's only a matter of time before the new FAA ruling becomes implemented in full.



The Chirok, which roughly translated means 'Teal', is Russia's new amphibious UAV.

## FROM RUSSIA, BY SEA AND AIR

Russia Has a New Amphibious UAV in the Works

■ Drones may be all the rage of late, but it's easy to forget that UAVs (Unmanned Aerial Vehicles) were once at the heart of the development of drone technology around the world. As its name suggests, these machines could fly consistently at altitudes higher than a normal plane would, and was more cost-effective in terms of human resources.

Russia hasn't seem to be forgotten this technology, which explains why their military have been developing an amphibious UAV to suit their purpose in sea and in the air. It's called the Chirok, and it was developed by the Russian owned United Instrument Corporation (UIC), which in effect, is a branch of the state-owned Rostec Corporation.

The model has a 10-meter wingspan, weighs in at 750kg, and its maker says that it should be operational by August this year. UIC has said that the Chirok will be able to fly high at 6,000 meters, with an operational range of 2,500km; roughly the distance from Kuala Lumpur to Perth in Western Australia.

In addition to that, UIC also hinted that the Chirok is designed to carry a payload of 300kg, which is roughly the weight of three passengers worth of smart munitions and other form of weapons for both defensive and offensive operations. Because of its composition, the Chirok is also meant to be stealthy, allowing its operators to fly it during stealth missions, which also makes it all the more dangerous.



# Q&A X

APRIL 2015 VOL 12 ISSUE 1

## HISTORY AND MYTH COLLIDE

STEP INTO THE ALTERNATE VICTORIAN-ERA  
LONDON OF THE ORDER: 1886

**FEATURE**  
PICTURE PERFECT  
GAMING

**NEWSWIRE**  
NVIDIA SHIELD, TITAN  
X AND MGS V: THE  
PHANTOM PAIN



# EARTH-SHATTERING STUFF

NVIDIA Announced Shield Android TV and Titan X GPU at GDC 2015

NVIDIA made some surprising announcements at its recent appearance at the annual Game Developers Conference, most notably the NVIDIA Shield home console and the flagship Titan X graphics card.

The Shield home console – which NVIDIA claimed is also the world's first Android TV – is set to disprove the long-standing notion that states one would need a high-end gaming PC to enjoy the most demanding of games.

This is mainly possibly due to the Shield being granted access to NVIDIA Grid – a cloud-based supercomputer. This unique relationship between the two platforms allows you to effortlessly stream the most graphically-intensive games directly from the Grid, and enjoying them on the Shield home console.

To put it simply, NVIDIA Grid undergoes all the hefty processing required to run your

game of choice, while the Shield merely handles the task of displaying it on screen. Furthermore, if your Internet connection is sufficiently fast – NVIDIA recommends a speed of 50Mbps – you can have your games streamed to you in 1080p and at 60 frames per second.

This brings us to their next behemoth – the Titan X GPU.

While we don't have many specifics to work with, NVIDIA CEO Jen-Hsun Huang did mention during its unveiling that the Titan X is built on NVIDIA's Maxwell architecture, features eight billion transistors, a 12GB framebuffer and took thousands of engineer-years to build. What we do know for sure is that the Titan X is set to be one of the most, if not the most powerful GPU on the market when it officially goes on sale.



# REMASTERING FANTASY

Final Fantasy X/X-2 HD Remaster for PS4 to Arrive on May 12

If you have been incessantly praying to the Gods above for the opportunity to experience Final Fantasy X or X-2 through the awesome graphics of the PS4, it looks like you're in luck, as Square Enix has announced that Final Fantasy X/X-2 HD Remaster will be heading to the PS4 on May 12, 2015.

In addition to the two base games, the HD remaster will also include Final Fantasy X: Eternal Calm and Final Fantasy X-2: Last Mission – two titles that were once exclusive to the Japan market. The HD remaster brings about several unique features as well, with one of them being the cross-save functionality. This essentially gives you the freedom to transfer the game's save files between the various

PlayStation systems (eg: PS4 to PS3) and continue playing from where you left off.

Apart from that, new to the PS4 port is the option to select between two soundtracks: the original classic soundtrack or the remastered version. If we were you, we would opt for the classic version to really reminisce the countless days that were spent playing the game back in 2001.

Final Fantasy X/X-2 HD Remaster will retail for USD\$49.99 (RM181), but if you pre-order the game over in the U.S, you will be rewarded with a free desktop calendar that features the artwork of renowned illustrator and video game character designer, Yoshitaka Amano.



If we were you, we would opt for the classic version to really reminisce the countless days that were spent playing the game back in 2001.



# BIG BOSS IS BACK

Metal Gear Solid V: The Phantom Pain Due for September 2 Release

Yes folks, Naked Snake is ready to slither back into action in Hideo Kojima's latest Metal Gear Solid offering – Metal Gear Solid V: The Phantom Pain.

Just like Ground Zeroes, The Phantom Pain will also be set in an open-world environment that has been upgraded to include elements like dynamic weather and the passage of time to deliver a more immersive experience. Also new to the game is the complete freedom to decide how you would want to execute your missions.

Also coinciding with the game's launch is the debut of Metal Gear Online, a competitive multiplayer mode that allows players to engage in combat with one another online.

As with most major video game releases these days, Metal Gear Solid V: The Phantom Pain will also be available in the form

of a limited edition bundle. The bundle will feature a beautifully redesigned PS4, colored the same way as Snake's red bionic arm and a DualShock 4 controller that too has received a makeover in the form of a gunmetal color scheme, complete with Snake's unit logo.

While we have yet to receive the pricing details for the game and the PS4 bundle, it should be noted that the aforementioned bundle is different from the Collector's Edition that is only offered in selected regions.

That particular edition, which may or may not be available here, comes packed with even more goodies encased in an exclusive packaging. Inside, you'll find a half-scale replica of Snake's bionic arm, a collectable SteelBook, a Blu-ray Disc showcasing behind-the-scenes footage and trailers, a physical map and a plethora of in-game items.



# THIRST FOR BLOOD

Wolfenstein: The Old Blood to be Digitally Released on May 5 for PC, PS4 and Xbox One

If you have managed to get your hands on Wolfenstein: The New Order when it was released last year, you probably would agree with us if we said that it was one of the most engaging FPS games of the year. There's no need for despair if you haven't though, as Bethesda recently announced that they will be releasing a prequel to Wolfenstein: The New Order – and it will be called Wolfenstein: The Bad Blood.

Wolfenstein: The Bad Blood will revolve around two main stories, comprising eight chapters. In the first story, Rudi Jäger and the Den of Wolves, players will take

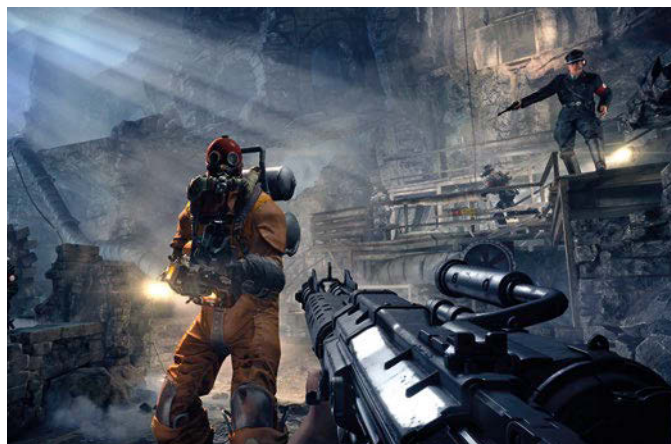


control of protagonist B.J. Blazkowicz as he attempts to fight off a demented prison warden, while trying to uncover the coordinates leading to main antagonist Deathshead's compound.

While the second story, titled The Dark Secrets of Helga Von Schabbs, sees Blazkowicz venturing into the city of Wulfberg, where he will have to face off with an obsessed Nazi archeologist who is hell-bent on unleashing a dark and ancient power through the uncovering of mysterious artifacts.

Be sure to get your Nazi hunting hat on when Wolfenstein: The Old Blood becomes digitally available for PC, PS4 and Xbox One on May 5 for USD20 (~RM74).

Wolfenstein: The Bad Blood will revolve around two main stories, comprising eight chapters.



# PICTURE PERFECT gaming

Revisiting Gaming's  
Pixelated Camera History

By Peter Chu

Apart from its already implied purpose as a tool for photography, cameras have also played an instrumental role as far as video games are concerned. Camera accessories for modern video game consoles, such as the PlayStation Camera and the Kinect 2.0, are packed to the brim with technology, complete with HD resolution cameras and even gesture recognition capabilities – but they didn't become what they are today overnight though.



Xbox Live Vision



Game Boy Camera

The Go!Cam for the PlayStation Portable is Sony's version of the Game Boy Camera. It features a 1.3-megapixel camera that captures 1,280 x 960 resolution images and record 480 x 272 resolution videos at 30 frames per second.



PlayStation Eye



PSP Go!Cam

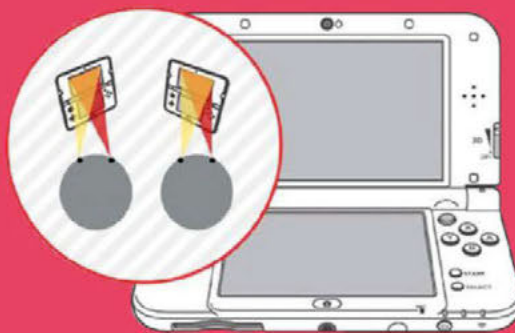


The New Nintendo 3DS XL comes with a sensor above the top screen that tracks your eyes to provide the ideal 3D image of the game you are playing – no 3D glasses needed.



## Face-tracking 3D

Face-tracking 3D immerses you in game worlds that you have to see to believe. Plus, you can take 3D photos, create 3D movies, and view AR Cards that bring characters to life.



This brings us to one of the pioneers of gaming's camera accessories – the Game Boy Camera. Sold as a separate peripheral for the Game Boy back when it was launched in 1999, it could, for example, take a snapshot of your likeness and transplant the image into compatible games.

Don't expect captured images to be of high quality though, as the Game Boy Camera can only take black and white images with a resolution of 128 x 112 – a 0.3-megapixel photo has a resolution of 640 x 480 – and a 4-color grayscale palette. It's not all that bad, once you consider that the full-fledged digital cameras of that era only had 1- to 2-megapixels to work with. What that said, it's safe to say that the Game Boy Camera served as a catalyst for the development of future camera accessories. It didn't take long before other console manufacturers jumped in on the uprising camera trend, with Sony being one of those manufacturers. In 2003, four years after the release of the Game Boy Camera, Sony released the EyeToy for the PlayStation 2. The EyeToy had a camera resolution of 320 x 420 which, is not necessarily a huge improvement over the Game Boy Camera, but it was an improvement nonetheless. This was then followed up with the PlayStation Eye in 2007, and finally the PlayStation Camera in 2013, which boasts a 720p camera resolution, facial and voice recognition capabilities.

Not wanting to be ousted by their arch-rival, Microsoft similarly decided to release a camera for their own console, the Xbox. In 2006, Microsoft unveiled the 640 x 480 resolution Xbox Live Vision camera for the Xbox 360. It's biggest feature was its ability to map your face onto a character in supported games – similar to what the Game Boy Camera could do, but much better and in 3D.

Four years later in 2010, Microsoft revealed the successor to the Xbox Live Vision, called Kinect.

It was so well received that it managed to snag the Guinness World Record for being the 'Fastest Selling Consumer Electronic Device' – a record that it still holds today. Exactly how fast, you ask? Well, the Kinect managed to sell at a rate of 133,333 units per day for 60 days when it went on sale on November 4, 2010.

Not wanting to lose the massive momentum that they had with the Kinect, Microsoft went on to release its successor, the Kinect 2.0, another four years later in 2014. Despite not being able to generate as much fanfare as its predecessor once did, the Kinect 2 was nevertheless still considered as the most advanced game console camera in the market – and still is, in fact. It's capable of taking Full HD (1,920 x 1,080) images and videos with its most noteworthy feature being its ability to track your body movement right down to the individual joints – 26 of them, no less – and up to six bodies at a time.



Kinect 2.0 for Xbox One



EyeToy for PlayStation 2



Kinect for Xbox 360

PlayStation Camera





Watch Dogs

#### YOU ARE WATCHING BIG BROTHER

Whether we noticed it or not, cameras have also went on to make several appearances within video games.

The first game that comes to mind, which prominently features the use of a camera, has to be Fatal Frame. Launched in 2001, the premise of the game is rather straightforward. Players take control of main character Miku Hinasaki as she ventures into a haunted mansion to look for her brother who went missing upon entering it two weeks before. The only thing between you and a flurry of evil spirits wanting to tear you apart is the Camera Obscura. You could say that the camera works as your third eye, allowing you to see the ghostly apparitions that you otherwise would miss without it.

On the flipside of things, recent games have also started utilizing surveillance cameras as part of the core gameplay mechanics, probably as a reference to the real world, which is slowly but surely heading towards being one big surveillance state.

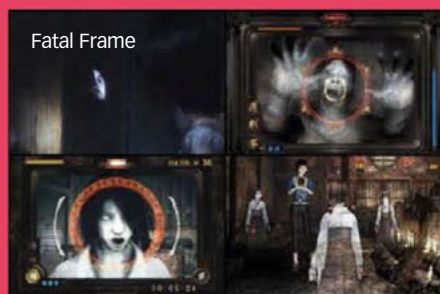
The most obvious of which is last year's triple-A title Watch Dogs. It is a game that

heavily revolved around the use of surveillance cameras to the point where players had to make use of it in order to progress further in the game. Well, what would you expect? This game does have a hacker of a main character roaming the surveillance-camera-filled streets in an attempt to find the person who's responsible for the death of his niece. It would be silly for him to not use the available cameras to his advantage, right?

Another game that heavily involves the use of surveillance cameras is the recently remastered game, République. The game, just like Watch Dogs, is set in a dystopic police state where everything and everyone is under surveillance. Your job is simple – to guide the main character, Hope, out of the

prison-like building that she is held captive in. The interesting bit is that you don't see the game from Hope's point of view, but through the surveillance cameras that are scattered throughout the facility. It looks like the watchdogs are the ones who are being watched now, eh?

Whether we noticed it or not, cameras have also went on to make several appearances within video games.

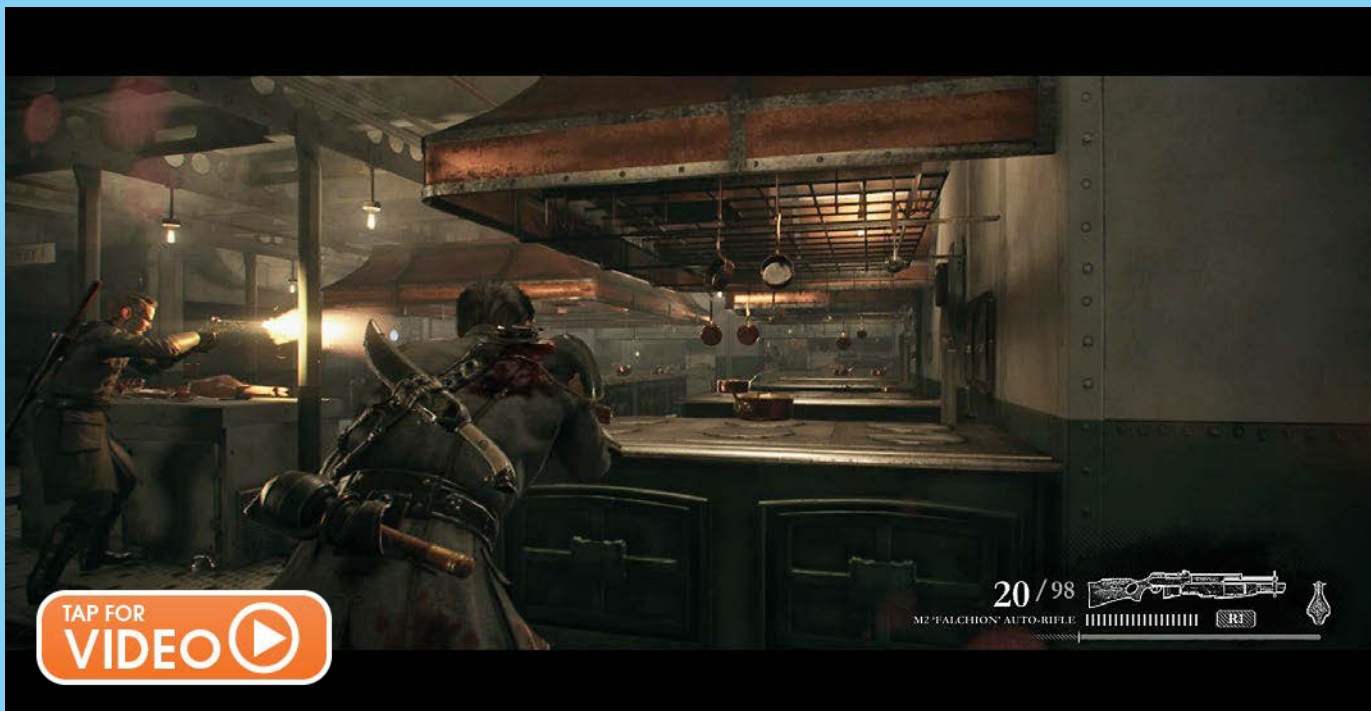


Fatal Frame



République





# A VERY TALL ORDER

**The Order: 1886**

## LONDON, REIMAGINED

As far as aesthetics goes, you could say that *The Order: 1886* has that aspect beautifully taken care of by its amazing graphics and the immaculately detailed depiction of a steampunk London. As a matter of fact, the game even comes complete with a cinematic aspect ratio of 2:40:1 – similar to what you will find in movies – to further emphasize the artistic elements of the game. Good intentions, but this brings about the presence of a significantly sized black bar occupying the top and bottom of the screen, which completely undermines the overall beauty of the game.

What's the point of going the extra mile to create a game that looks flawlessly beautiful when the black bars are only going to obstruct and limit the players' field of vision? I want to be overwhelmed by the sheer beauty of the game, and not be teased by it. Yes, one can always look around by rotating the camera angle with the right analog stick,

but we found that doing so every time we progressed into a new area of the game would only incur a headache from the incessant spinning of the camera.

## SLOW AND STEADY

Don't expect to play through *The Order: 1886* with guns constantly blazing, as the game – for all intents and purposes – feels painfully slow, primarily due to the game's strange preference for only allowing your character to walk (at a snail's pace, no less) instead of run most of the time. Then there is also an overload of lengthy cutscenes abruptly interrupting your gameplay whenever they could. Of course, the technical explanation is that these moments are meant to mask the load times. It didn't take long for these rampantly reoccurring interjections to make us lose our patience and frantically mash at random buttons in attempt to skip them and get back into the actual gameplay – but to no avail.

Combat mechanics leave

much to be desired as well. Gun battles heavily rely on the act of covering when you are being shot at, and popping out to return fire when the coast is clear. This rinse-and-repeat method of combat feels very mechanical, and becomes dreary as the game progresses. Like with most games these days, *The Order: 1886* also uses the controversial self-regenerating health system. So if you do get injured, stay low behind cover until the screen stops pulsing in a shade of red and you're good to go.

by Peter Chu

TESTED & RATED

**6.5**<sub>/10</sub>

**HWM**  
MALAYSIA

## AT A GLANCE

**Genre**  
Third-Person Shooter

**Developer**  
Ready at Dawn, SCE Santa Monica Studio

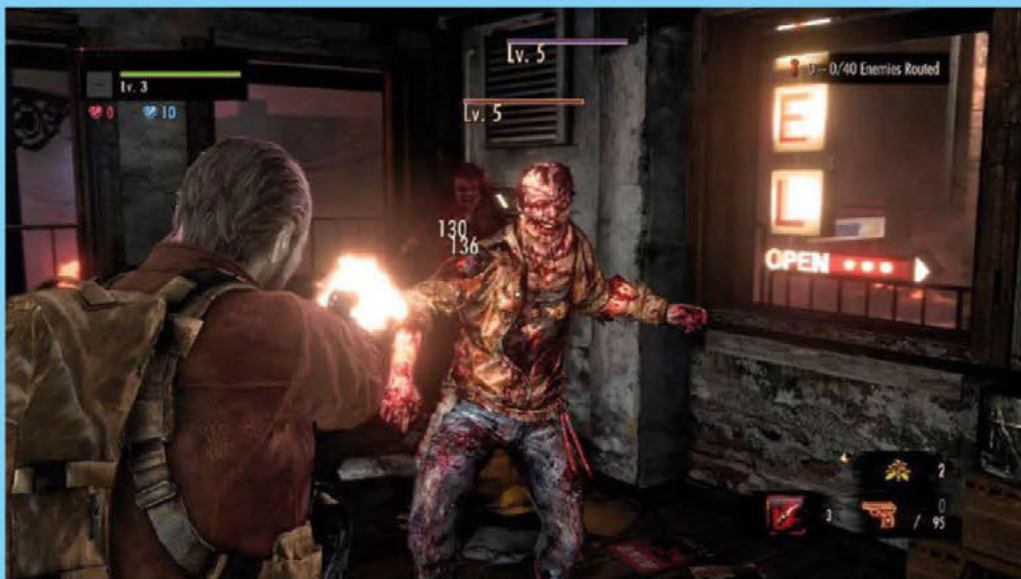
**Publisher**  
Sony Computer Entertainment

**Platform**  
PS4



## CONCLUSION

**The Order: 1886** is a beautifully designed game that is marred by its restrictive cinematic aspect ratio and its overly slow pacing.



# BUDGET EVIL

## Resident Evil: Revelations 2

Capcom's Revelations spin-off series seems to have gotten a life of its own. Despite the '2' at the end, Revelations 2 (R2) barely has anything to do with the first game. Instead, R2 takes place after the events of RE 6, with Claire and Moira being kidnapped, brought to a mysterious island and forced to fight to survive.

Like Resident Evil and Resident Evil 2, R2 has two campaigns, Claire with Moira and Barry with Natalia. The game's broken into four different episodes, with each episode having both Claire and Barry sections. The episodic nature means the game is shorter than expected, even with the copious amount of backtracking.

The Revelations series is supposed to take the series back to its survival horror roots, but doesn't really succeed too well. When it does, it relies on cheap jumpscare (instead of suspense or horror) to get the adrenaline going. There's no 'survival' to the horror too as surviving's incredibly easy because you can replay episodes to stock up on ammo and health.

Playing as Claire or Barry allows you to use guns, though you can also play as Moira or Natalia. Moira and Natalia both can spot hidden items, while Moira also can stun enemies and Natalia can see where enemies are through walls. Playing as either is fun and gives a new twist to an otherwise unremarkable game, though the plot has massive revelations for the Resident Evil mythos. So if you're a fan of the lore, you need to play the game.

While the main game won't last you long (despite its unlocks), the game's Raid Mode definitely will. Raid Mode is a gametype with RPG elements. You choose from a handful of RE characters, select a mission and then play. Each character has their own levels and upgradeable skills. Weapons can either be bought or found in chests in missions. Raid Mode's RPG elements make it very addicting as you constantly get more powerful guns and skills as you play. In fact, I enjoyed Raid mode more than I enjoyed the game proper, especially when playing in co-op. The only drawback

is the limited number of Raid maps available, with most of them being taken from RE6 and Revelations.

The game's low budget can easily be seen in the graphics and cutscenes. The textures and characters look last gen, though at least the framerate is constant. Same goes for the sound too. They sound low quality when compared to previous games.

R2 is a passable RE game but it's nowhere near the quality of the original RE games or even the first Revelations. But for RM83 though, it's more than worth it, especially if you're into Resident Evil.

by Salehuddin Husin

TESTED & RATED

7.0/10

HWM  
MALAYSIA

### AT A GLANCE

**Genre**  
Third Person Shooter

**Developer**  
Capcom

**Publisher**  
Capcom

**Platform**  
PS4 (Tested), PS3,  
Xbox One, Xbox 360



Raid Mode is the main draw of Revelations 2.



Hunk's Stealth Cloak skill is arguably the best skill for Raid Mode.

### CONCLUSION

It's nothing new or revolutionary, but the budget price and Raid mode makes it a worthy purchase.



# aperture



April 2015 Vol 7 Issue 8

## NEWS

**Canon reignites the megapixels war with the new EOS 5DS and 5DS R**

## FOCUSED

**Getting to know YL Camera**

## LEARN

**Parallax effect: Moving still images**

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Getting to know YL Camera's latest expansion in Jaya 33.

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Our verdict on the aptly-named Sports Cam.

## Prepare for Megapixels War

Is there an end to the megapixels war? Well, it looks like it's set to reignite with the recent launch of Canon's EOS 5DS and 5DS R – two full-frame DSLRs with a 50MP CMOS sensor. With such a high-resolution sensor, these pair of new flagships should have no problem taking on medium format cameras. Will this pave the way for the other camera manufacturers? Only time will tell.

Apart from that, we also interviewed Desmond Liew of YL Camera to learn more about its recent expansion at Jaya 33. For Learn this month, renowned underwater photographer Kay-Burn Lim shares the process behind transforming still images into moving ones.

For any comments or feedback, you can always head on over to [forums.hardwarezone.com.my](http://forums.hardwarezone.com.my) and share your thoughts with us.

**Ammar Uzair Aminuddin**  
HWM Malaysia

aperture uses the ASUS ProArt PA238Q monitor for all its image editing and viewing

**ASUS**





These are two new EOS cameras to start the megapixels war all over again.

# KING OF MEGAPIXELS

Canon Reignites the Megapixels War with the New EOS 5DS and 5DS R

It's been almost three years since the launch of the EOS 5D Mark III and this year, Canon returned to reignite the megapixels war by unveiling two new full-frame DSLRs: the EOS 5DS and EOS 5DS R.

Both cameras are packed with a 50.6MP full-frame CMOS sensor, which is touted as the highest in its class. With that amount of megapixels, we believe these cameras will be popular amongst landscape and studio photographers as they can serve as an alternative to the expensive medium format camera. Paired with the high-performance sensor are the dual DIGIC 6 image processors, along with 61-point autofocus system to produce high-quality photos. Both cameras also feature Fine Detail Picture Style, which gives users more control over the sharpening option.

Furthermore, there are also a slew of improvements on the design aspect of the

EOS 5DS and EOS 5DS R, which include a reinforced chassis, base plate and tripod lug, as well as a modified mirror vibration control system that significantly improves stability and reduces mirror bounce. Other interesting specifications that users will appreciate are its capability to continuously shoot up to 5fps, along with a 3.2-inch LCD display and a viewfinder with 0.71x magnification.

The only difference between these two cameras is that the EOS 5DS R has an optical filter to cancel the optical low-pass filter effect. This is done to obtain maximum sharpness from the sensor. Both cameras are expected to be released in June this year, but there's no final word on their pricing just yet. However, it will be interesting to see how other camera manufacturers respond to these 50.6MP giants.



## THE NIFTY TRIO

Sony Reveals New Lineup of Full-Frame Prime Lenses

Sony has done an amazing job with its revolutionary A7 mirrorless full-frame camera. Since then, the company began to unveil a slew of accessories, recently being the latest additions to the E-mount lenses' family, which include the FE 90mm f/2.8 Macro G OSS lens, Zeiss Distagon T\* FE 35mm f/1.4 ZA, and FE 28mm f/2 wide-angle prime lenses.

The most outstanding (and priciest) amongst the trio is the Zeiss Distagon T\* FE 35mm f/1.4 ZA. Designed as a universal lens for any type of photography, this wide-angle prime lens is able to produce lovely bokeh through its 9-blade circular aperture with three aspherical elements and a Zeiss T\* coating. Also, it can deliver silent, accurate and fast focusing, thanks to Direct Drive SSM technology.

The second least expensive option is the FE 90mm f/2.8 Macro G OSS. Equipped with built-in image stabilization, this medium telephoto macro lens has the ability to shoot sharp images even with handheld up to 1:1 magnification. On top of the features that G lenses are renowned for, it also has Nano AR coating for accurate light transmission and protected against moisture and dust.

For those who love to photograph landscapes, you may want to consider the FE 28mm f/2 wide lens, which produces sharp and bright photos with its f/2 maximum aperture. Also, this lens features a dust- and moisture-resistant, lightweight design. These three new Sony prime lenses will be available at retail in Q2 2015 with the respective prices:

- Zeiss Distagon T\* FE 35mm F/1.4 ZA USD1,600 (approx. RM5,843)
- FE 90mm f/2.8 Macro G OSS USD1,100 (approx. RM4,017)
- FE 28mm f/2 USD450 (approx. RM1,643)

## FAST AND LIGHTWEIGHT

The D7200 is Nikon's First DSLR with Built-in NFC and Wi-Fi

Many high-end compact cameras these days come with built-in Wi-Fi and NFC sensor. Nikon is the first camera manufacturer to bring the aforementioned features to its DSLR family, starting with the new D7200.

This model is an evolutionary rather than revolutionary upgrade to the D7100, as it boasts a 24.2MP DX-format APS-C CMOS sensor with no optical pass filter, enabling users to capture sharper images. It runs on the EXPEED 4 image processor that Nikon claims is 30% faster than its predecessor. It also has a native ISO range of 100 to 25,600 to handle just about any lighting condition. Not only that, the D7200 is capable of up to 6FPS continuous shooting, while its 51-point autofocus array helps produce high-quality photos.

In addition to still images, the D7200 also shoots Full HD video at 24/25/30 FPS without crop, and 50/60 FPS with crop factor. However, that's not all, as the most notable features are built-in Wi-Fi and NFC for easy wireless connectivity. With these features onboard, users can view their photos and save them directly to their smart devices. Users will also be able to shoot remotely without the need for a remote shutter trigger.

The Nikon D7200 will be available in the market from April onwards for a price of USD1,200 (approx. RM4,382) for body only and USD1,700 (approx. RM6,209) with the AF-S DX NIKKOR 18-140-mm F3.5-F5.6G ED VR lens.



The Nikon D7200 offers a bigger buffer for RAW images, as well as improved low-light performance.



# FLEXIBLE, SEAMLESS SHOOTING EXPERIENCE

## Handheld Gimbal 101

Have you come across the handheld gimbals? Given the popularity of action cameras, you're bound to have seen one of these camera stabilizers in the stores or online. Here's a little bit of history behind this revolutionary technology from a filmmaking perspective.

Gimbals were initially used on drones for aerial shooting. A U.S. drone maker called Freefly Systems came along, and took the concept further by introducing that same technology for filmmakers to perform on-ground shooting with its M-series gimbals.

Thanks to these camera gimbals, filmmakers can now realize smooth handheld shots, just like they're floating in the air without having to rely on the bulky Steadicam. There are two types of camera gimbals: 2-axis and 3-axis, which are powered by brushless motors to keep the camera level on all axes.

We are seeing much advancement in stabilization technology over the past year, as many startups have made many improvements, from pricing to practicality. One such company is Big Balance. This Hong Kong-based company has made the gimbal an indispensable tool for professionals and amateurs alike.



These are the Big Balance Gibbon GN1 and Husky HY2 gimbals that are specifically designed for action cameras and smartphones, respectively.

## WHY THE NEED FOR A CAMERA GIMBAL?

You can have the best camera, creators and cast for a film, but if there's a wobbly camera movement, it is a sign of unprofessionalism and can be a turnoff to the audience. This is where the camera gimbal comes in, as it can overcome this issue by providing smooth, fluid motion without limiting your ability to move around.

### Flexibility

With its compact size, the camera gimbal will allow you to create shots that are impossible to achieve via handheld shooting without the use of a jib arm, crane and dolly. This gives you more time to experiment in a number of ways, and less wasted time on adjusting the gimbal as you would with a Steadicam in the past. For example, you can just swivel and tilt the camera smoothly, while recording an action-packed or fast-moving scene.

### Emotion

By achieving smooth camera movement in the film, it will definitely resonate with the audience's attention and emotional core. For instance, the one-take illusion demonstrated in Alejandro González Iñárritu's *Birdman* can create an immersive viewing experience, while making its storyline even more engaging.

### Versatility

Another reason to use the camera gimbal is its versatility, as it enables you to mount additional accessories, such as microphone and external screen. Not only that, the camera gimbal can be mounted on the car or drones, and yet still produce a non-shaky footage.

For more information, visit [www.bigbalance.com](http://www.bigbalance.com)

# BRINGING STILL IMAGES TO LIFE

Here's how you can use parallax effect to turn static photos into moving images.

by Kay-Burn Lim

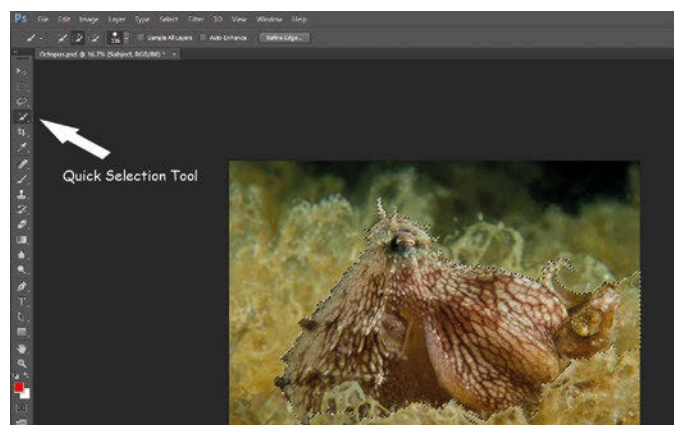
Have you gone through your photos recently and wished they were shot as videos instead? What would you say if we were to tell you that it's possible to turn them into moving images? Using Parallax Effect, you'll be able to achieve just that.

You've probably come across this effect in a film's post-credit sequence, TV commercials, or even on YouTube. The result is mesmerizing, transforming a still image with perceived depth, camera angles and subtle movement.

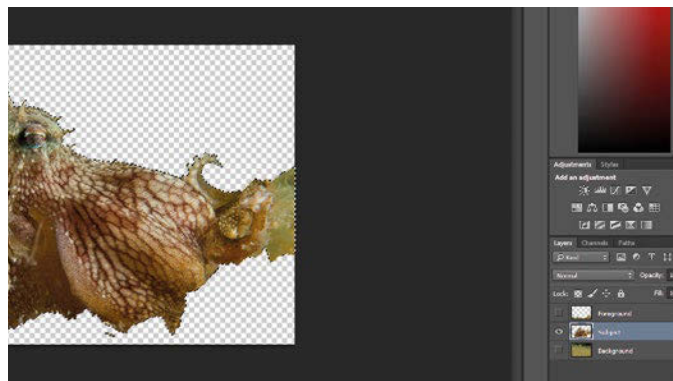
It can be hard to explain until you see it for yourself. Case in point: (<http://youtu.be/xREty-2hr5c>). This was created using Adobe Photoshop and After Effects. The former is to split the image into various layers, while the latter is used for the animation portion of this tutorial. It's also possible to utilize Premiere Pro, but that's a story for another day.

## STEP 1: SPLIT THE IMAGE INTO LAYERS IN PHOTOSHOP

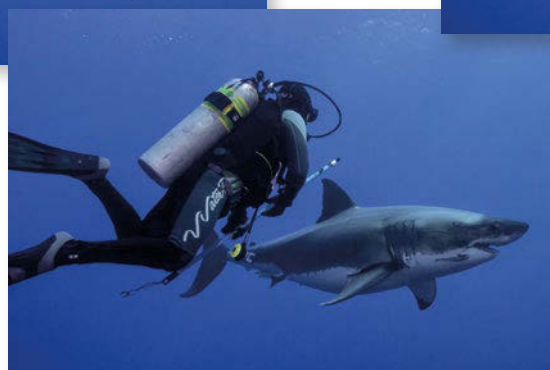
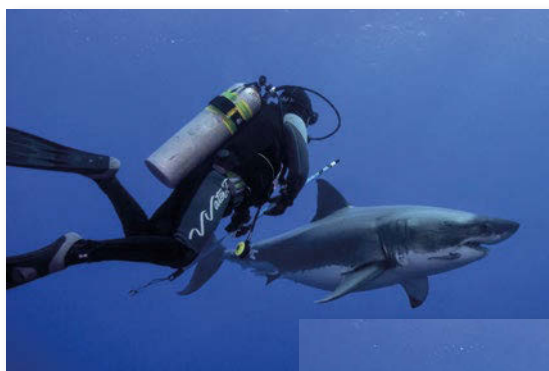
Study your image choice carefully, preferably one with a foreground and background. Images with bokeh that shows very clear depth of field are highly recommended. Right click on the background layer to create a copy, and naming them accordingly (e.g. front, back, middle, etc.).



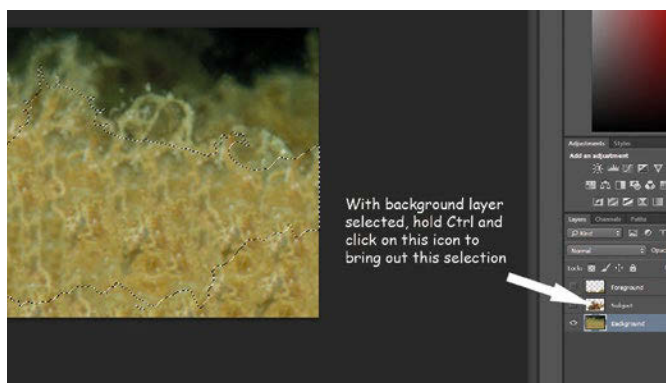
Select the 'Quick Selection' tool on the cloned layer, and carefully pick out what you consider to be the main subject.



Do not be alarmed if you accidentally select an unwanted area. You can hold the 'Alt' key to deselect them. Once the selection has been made, press Ctrl-J (or Command-J) to create a separate layer with just the chosen selection. Repeat the procedure and separate the foreground the same way.



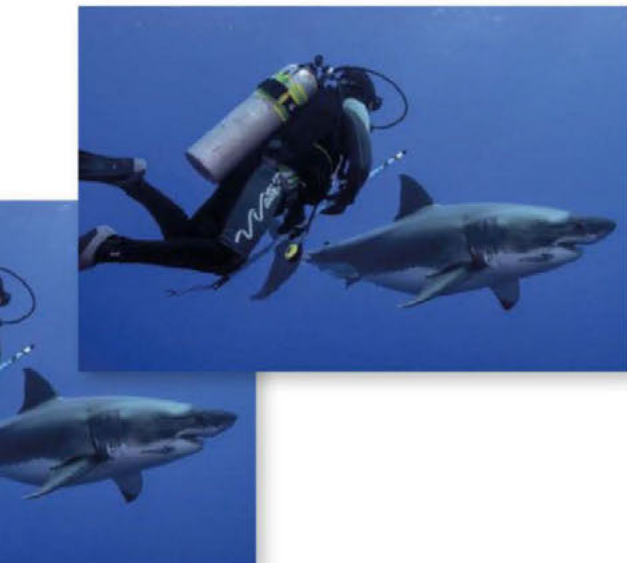
Next, you'll want to separate the background. Once again, go back to the background layer and create a duplicate. With this layer set as visible (hiding the rest by clicking on the 'Eye' icon in the layer selection window), Hold down the Ctrl key and click on the layer icon of the cutout you've just created. The previous selection will then appear on this new layer.



Go to 'Edit' > 'Fill' and choose 'Content-Aware'. The selection will then be replaced by a new content fill that should mimic the background.

Sometimes, it may not turn out perfect, but that's normal, as the most important areas are the parts near the border of the selection. This same procedure is repeated for each layer to create foregrounds (or other subjects) that you may wish to animate. When every layer is completed, it's time to save your work as a .PSD file with all the separate layers intact.





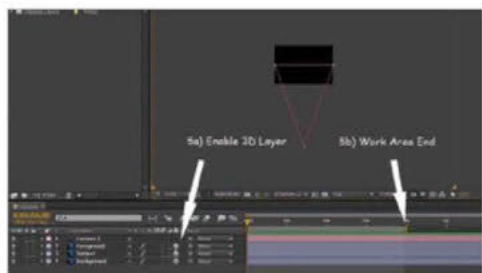
## STEP 2: CREATE A VIRTUAL 3D SPACE AND CAMERA VIEW USING AFTER EFFECTS

With the tedious tasks out of the way, After Effects is now our tool of choice to create the short animation. Each photo should ideally run between 5-8 seconds. If the camera angles are subtle, it's recommended that you make shorter clips to enhance the effect.

When in After Effects, choose 'File' > 'Import' > 'File' to import your .PSD file, open your image with all the layers, and choose the selections shown here.



Next, double-click on 'Composition' in the Projects tab to launch the actual composition. You should then see the separate layers of your image on the bottom-left pane. From here, enable 3D layers for all the layers by clicking on the box as shown below (see: 5a)



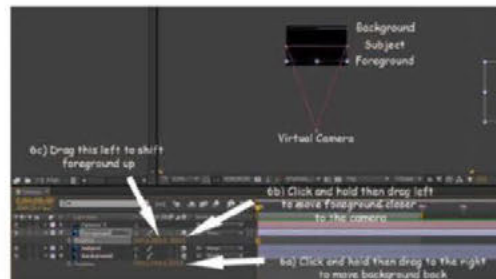
From the menu, choose 'Layer' > 'New' > 'Camera' to create a virtual camera's point of view. We tend to favor 50mm for the preset, but you may play around with any virtual lens options.

The final preparation step is to reduce the clip length between 5-8 seconds by moving the cursor on the bottom-right area labeled 'Work Area End' (see: 5b). You may change the size of the virtual camera image or 'Active Camera' image by clicking on it and pressing Ctrl+ (or Ctrl-). You are now all set to create a 3D world from your 2D photos.

## STEP 3: FINE-TUNE THE LAYERS AND SCALE ACCORDINGLY

Click to select the background layer on the bottom-left tab and press 'P' (for Position). This brings up the position details for all three axes. Click and hold the right-most of the three variables (see: 6a) and drag it to the right. You should see the background move in the virtual camera diagram above. Move the background all the way to the back by dragging the cursor to the right. You will notice on the Active screen (top-right corner) that moving the background also has an effect of making the background smaller.

Next, click to select the foreground layer, press 'P' and move it to the front (see: 6b). At this point, you may want to move the foreground image higher in the frame. To do so, adjust the variable in the middle by clicking on it and sliding to the left (see: 6c).



Notice that the background image is now much smaller as it is further away, while the foreground image is much larger. To compensate for this, select the respective layers and press 'S' to bring up the Scale menu for the layer. The position variables will then switch to the scale variables. Next, on the right-most variable, adjust the same way via clicking and dragging to the right to scale up. You should make the background image larger than the actual video window as we will be panning the camera left to right, which meant having to cover a larger background area.

The subject may be left in the middle and untouched for now. And you should use the same technique to scale down the foreground. You may, at any point in time, use these functions to go back and fine-tune your positions and image sizes as needed.

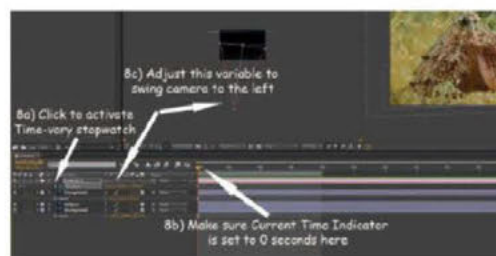


## STEP 4: ANIMATE THE CLIP

Click on the Camera layer and press 'P'. Next, click on the little 'Stopwatch' icon to highlight it (see: 8a). This is the 'Time-Vary Stopwatch', which toggles the ability for properties to change over time. In this case, we will be moving the position of the camera from left to right over an 8-second duration. Make sure the Current Time Indicator (see: 8b) is at the beginning of the clip (0-second mark).

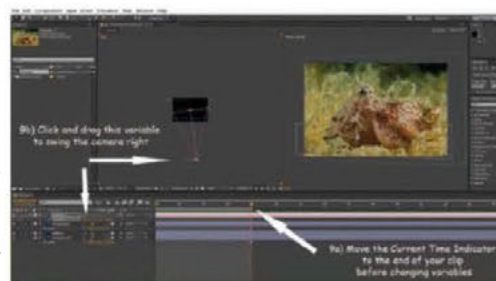
Click and drag the left-most position variable to the left to make the camera swing left (see: 8c). At this point, you may need to return to the other layers and adjust the scale to ensure it covers the entire image.

Move the Current Time Indicator to the end of the clip (see: 9a) and then move the camera's position by dragging the same variable (left-most) to the right (see: 9b). You should start to see the parallax effect now.

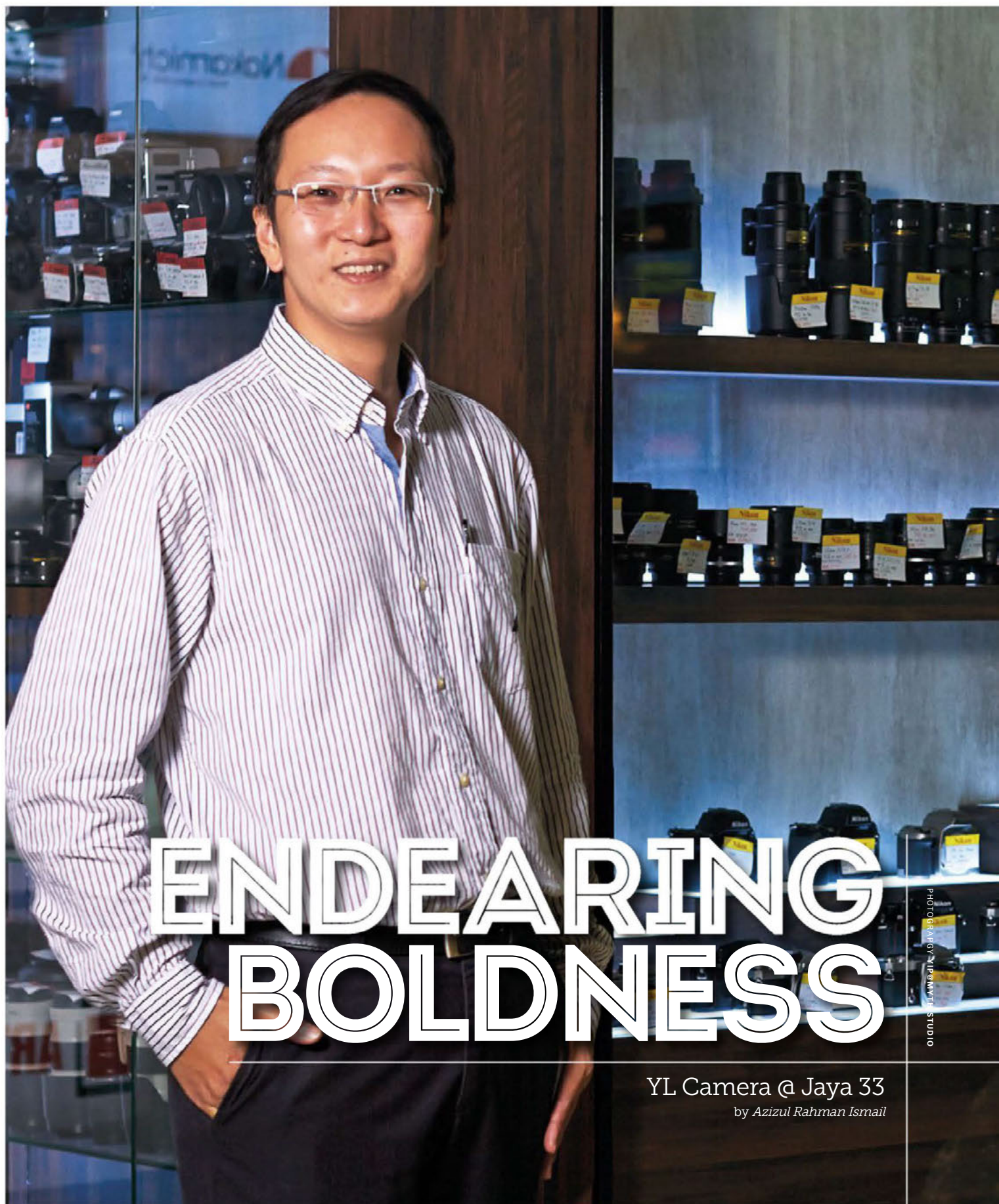


You may now move the Current Time Indicator left and right to review the effect on the Active Camera panel. As mentioned before, fine-tune the scaling or positions of each layer where necessary. You may also move the camera inwards into the scene by shifting the other position variables.

Once satisfied, within the menu, go to 'File' > 'Export' > 'Add to Render Queue' to render your video. Click the 'Render' button and wait for your masterpiece to be completed!







# ENDEARING BOLDNESS

YL Camera @ Jaya 33  
by Azizul Rahman Ismail

PHOTOGRAPHY: XIPEWATI STUDIO





■ Among the experienced professional photography circles, the name YL Camera is legendary. Although relatively new, this once small second-hand film camera shop has grown into a trusted and respected, yet humble juggernaut. With the shop's latest expansion at Jaya 33, Petaling Jaya, we sat down with Desmond Liew, proprietor of YL Camera and talked about the business of photography.

#### How did YL Camera started?

YL Camera began as a small shop underneath the escalator in Pudu Plaza back in 1999. It started when my partner, a friend whom I met at a photography club, and I decided to go into business together.

We began by selling used camera and accepting trade-ins. Back then, film camera increased in value as time goes by. It was also near the cusp of when digital photography began to take hold. I fully took over the business in 2005.

#### What prompted the expansion?

I dare say that YL Camera was the first shop in Malaysia to have a dedicated camera shop and a dedicated accessory shop, instead of a singular shop. We knew that to stay afloat, we need to diversify. The biggest competitor of any brick and mortar shop is online.

The camera selling business has always been tough and we have an edge by offering prices that are competitive enough to compete with online stores. The shop's expansion serves to not only meet our customers' demand, but at the same time preempts them.

#### What about online?

We have always has an online presence. Even back in 1999, in the early years of the Internet in our country, we sold used cameras through other sites and message boards. Today, we have an online store, and we are active on social media as well.

We look at it as an important element to compete in the market today. Having said that, those who come and visit our shop will be able to get personalized treatment, the opportunity to test out a camera before they buy, and a tutorial on a camera they just purchased.

#### What products and services does YL Camera offer?

We carry a wide range of cameras from compacts to medium format digital cameras. Our main focuses are cameras and equipments for professionals, and currently that means DSLRs. We also continue our tradition of carrying used film cameras and films as well.

As for services, we do offer camera servicing and repairs for both digital and film cameras.

The strength of YL Camera is that we do our best to have what our customers want in stock. It costs a lot of capital. At our shop, our customers are sure to get what they want when they want it.

#### What do you think is in store for the future of photography?

Mirrorless looks like the direction professionals are headed to. They are preferred over SLRs because of their compact size and weight. However, they are not able to deliver SLR-quality photos just yet, but they will, soon.

Another aspect of photography that we anticipate to grow is drone photography. We carry DJI Inspire 1 drones here at YL Camera, alongside action cameras as we anticipate that this is a growing trend that will be here to stay.



#### YL CAMERA (M) SDN BHD

Lot No. PG-23, Ground Floor, Jaya 33,  
Jalan Semangat, Section 13,  
46100 Petaling Jaya,  
Selangor Darul Ehsan  
(03) 7958 6163  
[www.ylcamera.com.my](http://www.ylcamera.com.my)

# MINI ACTION CAMERA

## Sports Cam

When it comes to action cameras, most people would probably think of the GoPro HERO family, which command a premium based on their advanced capabilities and image quality. Naturally, the market was soon crowded with competitors, attracting consumers with markedly affordable alternatives with similar feature sets and then some. One such offering is the aptly-named Sports Cam, a Full HD action camera with a waterproof housing.

At first glance, you may think that the look and feel of the Sports Cam not too dissimilar to a GoPro HERO, but we found it to closely resemble the SJCAM SJ4000 action camera – though this could be chalked up to being one of those shared OEM designs. The overall packaging is rather sparse on details, with no branding of any kind, save for the specifications, companion app's QR codes, and a list of bundled accessories, of which they are a few.

The rectangular-shaped Sports Cam is fully covered with black rubberized plastic. Like most action cameras, it offers a front Power/Mode button, while the connectivity ports and expandable memory slot can be found on the left panel. Sadly, the ports are not covered with a rubber lid – a potential dust magnet. Meanwhile, the Up/Down buttons on the right panel will take you through the menu options.

Turn to the back and you'll find a 1.5-inch LCD screen, where you can view and select the shooting modes. Powering the Sports Cam is a 900mAh battery that can last up to 60 minutes per charge. Another thing that's great about this action camera is that the bundled accessories are more than just the waterproof housing and USB cable. We're talking about helmet side-mount, handlebar mount, wall charger, and more. Essentially, you're saving a lot on accessories. Also worth noting is that the

Sports Cam is compatible with a number of GoPro mounts.

With an asking price of RM399, you really shouldn't expect cinematic-quality video at such price point. We took it outdoor for our test and found the video quality to be decent, though the details appear soft. When switched to Car mode, the Sports Cam doubles as a dashcam, capturing a series of still images to be converted into time-lapse videos. While nothing mind-blowing, the recorded videos are quite usable for personal projects.

In terms of still images, the Sports Cam delivers fairly good photos with acceptable amount of details in daylight condition. Don't expect too much when it comes to close-ups, as that is not the purpose of an action camera. The photos start to lose sharpness and exhibit increased image noise in low-light situations, even on the highest megapixel setting.

by Ammar Uzair Aminuddin



### AT A GLANCE

**Type**  
Action Camera

**Megapixels**  
12.0MP

**Storage**  
microSD

**Display**  
1.5-inch LCD

**Price**  
RM399



There's a Micro-HDMI port for users to view video footage on a TV.

### CONCLUSION

**For those who seek value for money, without having to spend extra cash on a good selection of mounts.**

### SPECIFICATIONS

**Video** Full HD at 30/25/24fps (H.264) // **Lens** 170-degree Super Wide Angle lens // **Battery** 900mAh // **Connectivity** Built-in Wi-Fi, Micro-USB and Micro-HDMI // **Dimensions** 59.3 x 29.3 x 41.1mm (L x W x H) // **Warranty** 1-year // **Contact** Engtong Systems Sdn Bhd // **Tel** (03) 6143 5999 // **URL** [www.engtong.com](http://www.engtong.com)

TESTED & RATED

**7.5**<sub>/10</sub>

**HWM**  
MALAYSIA

Available at

**PLAZA LOW YAT**



# SMB

THE SMALL MEDIUM BUSINESS SECTION



## MICROSOFT PARTNER AWARDS 2015

The Software Giant Celebrates its Partners' Outstanding Efforts to Reinvent Productivity for Business Consumers in Malaysia

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### AZIZUL RAHMAN ISMAIL

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Coverage of business events in and out of the country



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Seagate Enterprise NAS HDD

# EFFICIENCY IMPROVED

## Brother Introduces Nine New Printers Aimed at Home Users, Schools, and SMEs

Brother International (Malaysia) Sdn Bhd, known for its home and IT peripherals, recently introduced a large selection of printers that promise customers real value with minor hardware and software modifications. The newly introduced models also come with either wireless or wired network connectivity for easy-to-manage printing. Also, the Wi-Fi Direct 'wireless models' connect mobile devices directly to the machine for instant printing via the use of Brother's apps, without the need to connect to a PC or wireless network.

"In the past decade, the size and price of laser printers have reduced considerably – and it has given us an opportunity to tap into a fast-growing market for home and small enterprise businesses. Brother's priority is always to serve customers for all repair and technical needs. To that extent, we have created an extensive network of Authorized Customer Service Centers (ASCs) throughout the country," said Itsuo Segawa, Director and Country Head, Brother International (Malaysia) Sdn Bhd.

The enhanced wireless capability allows users to enjoy wireless connectivity, including mobile printing using Apple's AirPrint or Brother's iPrint&Scan apps on three of the new Brother models: the HL-1210W printer, DCP-1610W Multi-Function Centre (MFC, without fax) and MFC-1910W (with fax). These printers tout affordable printing and feature



The Brother L2365DW mono laser printer.

hassle-free printing technology that prevents paper jams, delivers up to 1,000 pages of high-quality prints, and with separate replacements for toner cartridges and drums. All three models come with a 3-year carry-in warranty.

Also introduced were two mono laser printers: the HL-L2360DN and the HL-L2365DW; and four MFCs: the DCP-L2540DW (without fax), the MFC-L2700D, the MFC-L2700DW, and the MFC-L2740DW. These printers are loaded with enhanced features for long-term reliability and efficiency. The MFCs (DCP-L2540DW (without fax), MFC-L2700DW, and MFC-L2740DW) come with wireless capability with a print capacity of 30 pages per minute and a 'Deep Sleep' power saving mode, saving electricity and making them environmentally friendly.

In its 2014 Annual Security Roundup, Trend Micro calls the cyber attack against Sony that resulted in approximately 100 terabytes of compromised data and US\$100 million in damages as prolific in one of the biggest years on record for cyber security.

"All in all, it's a combination of identifying what's most important, deploying the right technologies, and educating users. It is everybody's job—not just those of IT professionals—to ensure that the company's core data stays safe. The past year was unprecedented in terms of the size and scope of cyber attacks as evidenced by the Sony situation. Unfortunately, this will most likely be a 'sneak peek' of what is to come," said Goh Chee Hoh, Managing Director for Malaysia, Singapore and Indonesia, Trend Micro.

Trend Micro's report also highlighted that no threat is too small as it did not take a sophisticated piece of malware to cripple a target's attacks seen last year. Attackers are using a simple wiper to breach company's defenses with devastating effects.

Additionally, PoS RAM scrapers came close to becoming a mainstream threat in 2014, as several high-profile targets lost millions of customer data to attackers month after month. What's more worrisome is that the new attacks showed that no application was invulnerable in 2014 as attackers branched out into new territory.

Finally, online and mobile banking faced bigger security challenges and are proving that two-factor authentication was no longer enough to secure sensitive transactions, while ransomware became a bigger and more sophisticated threat across regions and segments, but unlike older variants, no longer just issue empty threats but actually encrypt files.

# TREND MICRO'S SECURITY ROUNDUP

## According to the Latest Summary Report of Security Events, Enterprise Security Needs to be More Diligent Than Ever Before



Goh Chee Hoh, Managing Director for Malaysia, Singapore and Indonesia, Trend Micro.



# FORTISANDBOX 2.0 LAUNCHED

Fortinet's Suite of Solutions Just Got Better with the Introduction of FortiSandbox 2.0

Fortinet released an update to its top-rated FortiSandbox Advanced Threat Detection Appliances and FortiSandbox Cloud solutions in the form of FortiSandbox 2.0. It has the ability to quarantine compromised users and end points with one click, delivering additional mitigation against zero-day and advanced threats.

Combined with Fortinet's Advanced Threat Protection (ATP) Framework, the solution ensures a new level of protection from sophisticated cyber threats.

"The number one most exploited vector for attacks within an enterprise has consistently been through an organization's emails. Our updated FortiSandbox 2.0 and overhauled Advanced Threat Protection Framework were engineered to shine a light on the dark places, like emails and attached documents, where many other security solutions just can't see. This provides Fortinet customers with the peace of mind that they are protected from the most nefarious threats out there," said Eric Chan, Solution Consulting Director for Southeast Asia and Hong Kong, Fortinet.

Here's an example of how the system works. When a malicious email is sent to someone in the network, FortiGate will re-route the file elements within the email to FortiSandbox for analysis. Meanwhile, FortiMail automatically holds the offending mail until it is verified as safe. If that email contains nefarious elements, FortiMail will then block the email and FortiSandbox uploads the data from its analysis to FortiGuard. This in turn triggers an automatic update to the entire Fortinet security ecosystem across the globe.

FortiSandbox 2.0 is available now from authorized Fortinet channel partners.



Eric Chan, Solution Consulting Director, Southeast Asia and Hong Kong, Fortinet.



(From left to right) Mohamad Yusman Ammeran, General Manager, Mass Business Sales, Consumer & SME, Telekom Malaysia receiving the coveted Microsoft Country Partner of the Year Award from Azizah Ali, General Manager, Small and Midmarket Solutions and Partners (SMS&P), Microsoft Malaysia.

## LOYALTY REWARDED

Microsoft Recognizes Partners' Contributions at the Microsoft Partner Awards 2015

Microsoft recently held an event to celebrate its partners whom they have deemed outstanding. With the Microsoft Partner Awards 2015, the company recognizes excellence in the IT sector from companies that have integrated Microsoft's solutions into their products and services to accelerate innovation.

"For more than 20 years in Malaysia, Microsoft worked closely with our partners to help Malaysian business transform through the cloud so enterprises get the most out of their IT investment, contribute to business bottom lines, improve in the cloud business and have shown promising wins in partnership with us, spanning the Public Sector, Enterprise, and SME segments," said Azizah Ali, General Manager, Small and Midmarket Solutions and Partners, Microsoft Malaysia.

Among the companies celebrated were Infront Consulting Group (M) Sdn Bhd, Sistem RKK Sdn Bhd, Silverlake AXIS Sdn Bhd, Ingram Micro Malaysia Sdn Bhd, SoftwareOne Experts Sdn Bhd, Elitetrax Marketing Sdn Bhd, Jardine OneSolution Distribution Sdn Bhd, Mason Technologies, ECS Astar Sdn Bhd, Adv Fusionex Sdn Bhd, Maslog IT Solutions Sdn Bhd, and iDimension Systems Sdn Bhd.

The most prestigious award of the night, Microsoft Malaysia's Country Partner of the Year 2015, went to Telekom Malaysia for having demonstrated business excellence in delivering at scale Microsoft Office 365-based productivity solutions.

"We would like to thank Microsoft, and we are absolutely thrilled to be announced as the top Country Partner of the Year for Malaysia. This symbolizes the extensive efforts that has been put in from the Microsoft and TM teams to create real impact in Malaysia and bring transformation to businesses - just as our tagline goes: Business Made Easier with TM," said Mohamad Yusman Ammeran, General Manager, Mass Business Sales, Consumer & SME, Telekom Malaysia.

# MODERN DATA CENTER

## Veeam Availability Suite v8 Helps Organizations Deliver Always-On Business

Veeam Software, the solutions provider behind Veeam Availability Suite, saw more than 36 percent of its customers upgrading to the latest iteration of its availability solution within the first 90 days of release. The release of Veeam Availability Suite v8 paved the way for the 'Availability for the Modern Data Center' category.

Veeam Cloud Connect backup and NetApp integration are among the notable features and enhancements to help organizations address the availability gap, delivering rapid recovery for entire VMs and individual files; near-continuous data protection and streamlined disaster recovery; verified backup recoverability with mitigated risks; as well as real-time monitoring and alerting for complete visibility.

"Our key message is availability. By bridging the availability gap, organizations who adopted Veeam Availability Suite v8 will be able to achieve low recovery time and point objectives (RTOs) of less than 15 minutes, which is crucial in a time when users simply will not tolerate hours or even days of downtime," commented Alec King, Vice President for Product Management at Veeam Software.

Veeam reported significant growth, a cumulative US\$389 million in new license bookings and renewals (33 and 66 percent year-on-year growth – 2013/2014), which contribute to total revenue of more than US\$1 billion since 2007. The company recently introduced Veeam Endpoint Backup FREE, which allows anyone to back up their Windows desktop and notebook PCs to a hard drive, NAS share, or a Veeam backup repository. The beta release can be downloaded from Veeam's website.



Alec King, Vice President for Product Management, Veeam Software.

# UNLEASHING THE ONE PERCENT

## GE Brings Together Professionals from the Technology Industry to Discuss the Latest Developments in the Industrial Internet



Speakers at the Minds + Machines Malaysia 2015.

General Electric (GE) Inc. launched its inaugural Minds + Machines Malaysia 2015 as a platform to drive conversations around the Industrial Internet – the integration of complex physical machinery with networked sensors and software.

"The power of one percent is the notion that a small change drives a big impact. For customers, this 'one percent' in terms translates into improved efficiency, less downtime and costs, which could bring remarkable efficiency savings of approximately USD\$276 million (approx. RM1 billion) to the global economy in the next 15 years," said Stuart Dean, CEO of GE Asean, in reference to the theme of the event, 'Unleashing the Power of One Percent'.

Minds + Machines Malaysia 2015 saw speakers from various public and private sector organizations, such as Dato' Dan E. Khoo, Vice President of Corporate Strategy, Multimedia Development Corporation (MDeC); Kamarul A. Muhamed, Founder and Managing Director, Aerodyne; Kenny Sng, Solution Architect, Intel Corporation; and Vijay Ramani, Senior Manager, IoE Strategy & Market Development, Cisco Malaysia.

Some of the topics discussed include the public sector framework that is already in place to drive Industrial Internet in Malaysia, the policies that the government will be rolling out in the future, and how businesses can capitalize on this revolution.

The idea is that by unlocking the power of one percent, businesses will be able to enjoy greater savings and efficiency, by just making small changes to the way they do things.

Meanwhile, GE also launched two solutions. These include Predix GE's software platform for the Industrial Internet and GE Predictivity solutions, which provide advanced technology for asset and operations optimization.





# IFS ON WEARABLE TECHNOLOGY

Wearables are fast becoming the trend today in the consumer market. IFS Solutions, however, sees a potential of the technology in the industrial sector as well. We talked to Sridharan Arumugam, Vice President, IFS South East Asia to get the inside scoop.

## Tell us about yourself and your role at IFS South East Asia.

I am the Vice President of IFS Solutions South East Asia and I have more than 20 years of experience working in IFS, which is a global enterprise applications company, throughout Asia Pacific. My involvements include customers, partners and projects across a wide range of industries in my role at IFS Solutions South East Asia.

## In the consumer market, wearables are used to track user's vitals and performance during health-related activities. How would the same technology be used in the project-based industries?

While not always immediately obvious, there's also a whole host of applications for wearable technology in the workplace. I can imagine manufacturing and construction workers consulting information in the field

on a smart watch, or even a mechanic seeing vehicle diagnostics through augmented reality (AR) glasses. And wearable tech isn't just for manual workers, imagine being able to discreetly look to your wrist to check emails and appointments in a meeting.

## How would a company take advantage of this data?

IFS Labs, the innovation division of IFS, has created a proof-of-concept that shows how users of business applications can benefit from wearable technology. For example, field service operatives could be alerted when important items are shipped, key projects are started or completed, or even be notified when invoices are paid.

## What would a company need – including hardware, software, and infrastructure – to implement this idea?

For wearable devices dependent on support and analysis programs from web-based services, wireless connectivity is essential. As such, several wireless protocols are vying for the high-volume, wearable, personal area network (PAN) market. Wi-Fi also has appeal, especially as it is expected to be a significant player in the Internet of Things (IoT) and has wide deployment in homes, public spaces and

offices. Wi-Fi offers cloud-based connectivity, and its chips and modules are available as ready-to-go certified solutions.

## How would you address concerns from both employers and employees in regards to the collection and storage of such sensitive data?

An organization should consider upgrading its network security infrastructure. Advanced security solutions analyze data flows, and can identify the type of device sending and receiving data. Even if the security solution is not able to block the communication generated from the wearable device, detecting it may be enough to alert an administrator that an unacceptable device is being used on the network.

## Is there anything else you would like to share with us?

Over the next few years, wearable technology will reinvent the working day across many different industries, from nurses to office workers, to deep sea oil rig engineers. Wearables will not only save people time and make them more productive, they will also make it easier to capture and monitor information in real time to improve safety, and reduce accidents and downtime.

# DURABLE BUSINESS PRINTS

## Canon MAXIFY MB5370

### AT A GLANCE

**Print resolution**  
600 x 1,200dpi

**Scan resolution**  
1,200 x 1,200dpi

**Automatic duplex**  
Yes

**Paper Handling**  
Two 250-sheet trays

**Dimensions**  
463 x 394 x 351mm

**Price**  
RM1,108



With input and output trays extended, the MB5370's depth can go up to 607mm, so make sure you've enough table space.

Canon's recently-launched MAXIFY series joins its longstanding PIXMA line of printers in its stable of inkjet offerings. But while PIXMA printers generally focus on quality photo printing, MAXIFY appears to merge elements of their imageCLASS laser printers, and are geared toward business users. The MB5370 is the multi-function flagship of the MAXIFY series, which also includes the MB5070 and iB4070. When it comes to appearances, the MAXIFY MB5370 looks more like an imageCLASS printer than a PIXMA printer, all boxy and utilitarian.

As an inkjet printer targeted at the business side of things, the MB5370 comes with two 250-sheet paper trays and a 50-sheet, single-pass, duplexing automatic document feeder (DAF) for faster scanning of

two-sided documents. And in addition to a standard USB 2.0, it can be connected to your office network via LAN or Wi-Fi too.

The MB5370 takes a leaf from the book of the PIXMA series with its focus on mobile printing and support for protocols like Apple AirPrint and Google Cloud Print. The PIXMA/MAXIFY Printing Solutions app allows you to print from and save scans to your mobile device. There's also the PIXMA/MAXIFY Cloud link, a service that lets you access your files on social networking sites and cloud storage providers like Dropbox and Google Drive directly from the printer. To add on, you can store your scans to the cloud directly or email them straight to recipients, and even scan or fax to a network folder for later retrieval.

Then there are the other business-oriented features like Setting and Operations Restrictions. The former lets you set an admin password on your network and device settings to keep out unauthorized personnel, while the latter limits what users can or cannot do on the printer. For instance, you can specify that document copies always be made in black-and-white mode, or limit printing from or scanning to a USB memory stick. The cost-conscious business owner will also likely appreciate additional features like the ability to monitor usage and program the device to turn itself off or on at preset timings.

The MB5370's ability to initiate new tasks while the printer is still printing is then an indispensable function in a printer meant to serve a group of people, and it is also one







With the exception of the USB media port that's at the front, the other connections are found round the back of the printer.

#### CONCLUSION

**Fast printing, copying and a useful set of business features make the MB5370 a great start for Canon's new MAXIFY line.**

#### SPECIFICATIONS

**Print Speed** (ISO/IEC 24711-12) 23.0 / 15.0ipm // **Print Speed (Maximum)** 32.5 / 24.0ppm (draft) // **ADF Capacity** 50-sheet Duplex ADF (single pass scan) // **Page Yield (Standard)** 1,500 pages (B&W), 700 pages (color) // **Page Yield (XL)** 2,500 pages (B&W), 1,500 pages (color) // **Warranty** 3-years (on-site) // **Contact** Canon Marketing (M) Sdn Bhd // **Telephone** 1 800 88 2000 // **URL** www.canon.com.my

of our favorite productivity-enhancing features. Performance-wise, the MB5370 delivers fast printing and copying speeds and very decent image quality. In our simplex tests, the printer returned print speeds of 24.1ppm for B&W and 15.5rpm for color printing. This is actually comparable to the Canon imageCLASS MF217w, which is a RM1,028 mono laser printer that prints at 23ppm. However, it's worth noting that the average print speeds will vary according to your usage scenario. For instance, we noticed that the printer was quickest at printing Word documents, followed by PDF and Excel files in B&W, simplex mode.

The MB5370's fast print engine also translates directly into good copying speeds, and its twin-CIS (contact image sensor) ADF allows for double-sided scanning in a single pass, which makes it quite quick when copying two-sided documents as well. The MB5370's lower optical scanning resolution of 1,200 x 1,200dpi compared to

the PIXMA MX927's 2,400 x 4,800dpi also serves to differentiate itself as a more document-focused, and hence business-oriented printer. It may seem low when compared to the PIXMA printer, but it is actually on par with most laser-based, multi-function devices. Nevertheless, the interpolated resolution goes up to 19,200dpi, which can be useful for niche cases like line art.

With regard to image quality, it's difficult to see the difference between the output of the MB5370 and a laser printer at first glance. Closer inspection does reveal that a laser printer still produces sharper and more full-bodied text more consistently, but most users should be satisfied with the MB5370. Color text, graphics, and photos fared a bit worse, with print dots often visible and less smooth gradations, possibly due to the lower resolution and larger ink droplet size. Copy quality is also average, though it again matches what we've seen from most inkjet and laser multi-function devices with a contact image sensor.

Still, it's worth noting that these new MAXIFY printers use a new pigment-based ink that's resistant to marker ink and water spills. We've gone over the text with highlighters and even poured a cup of water over printouts, and they came away unscathed.

In sum, the RM1,108 MB5370 is a compelling laser alternative, offering great value for its feature set and performance when primarily used as a document workhorse.

by Ng Chong Seng

TESTED & RATED

**8.5**<sub>/10</sub>

**HWM**  
MALAYSIA

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## AT A GLANCE

**CPU**

Intel Celeron 2.0GHz  
Quad-Core (Boost up to  
2.41GHz)

**Memory**

2GB SO-DIMM DDR3L  
(expandable up to 8GB)

**External Ports**

3x USB 3.0, 2x USB 2.0, 2x  
eSATA, 1x HDMI 1.4a, 1x  
S/PDIF

**LAN**

2x Gigabit Ethernet

**Price**

RM2,099



The disc tray lock latches, but, functions more like a retaining screw.

## CONCLUSION

**Despite its quirks, the AS5102T is still one of the better NAS systems for your consideration.**

## SPECIFICATIONS

**HDD** 2.5-inch / 3.5-inch SATA II/ III or 2x  
SSD // **System Fan** 1x 70mm // **Max.**  
**Internal Capacity** 12TB (2x 6TB HDD) //  
**File System** Internal Disk: EXT4, External  
Disk: FAT32, NTFS, EXT3, EXT4, HFS+ //  
**Dimensions** 163.5 x 108 x 230 mm //  
**Weight** 1.99kg // **Warranty** 3-years //  
**Contact** Build Technology Supply Sdn Bhd  
// **Telephone** (03) 7955 3699 // **URL** [www.asustor.com](http://www.asustor.com)

TAP FOR  
**GALLERY**

# ECCENTRIC BUT CAPABLE

## ASUSTOR AS5102T

Back in February, we tested the ASUSTOR AS5002T, and we liked it overall, but we questioned some of its design choices. This month, we take a look at its cousin, the AS5102T to find out what this business-class network attached storage solution has to offer.

Right out of the box, the AS5102T is identical to the AS5002T. Similarly, we liked the large number of ports. At the front, there is a USB 3.0 port paired with a one-button backup button, while the back houses two more USB 3.0 ports, two USB 2.0 ports, two LAN ports, and two e-SATA ports. Additionally, there is also an HDMI port and an S/PDIF port that can turn the NAS into a

media center.

We also liked the same simple and functional exterior design, but we still have issues with the disk tray on the NAS. It is easy to eject, yet it still uses screws and not clips, which would make installing and swapping out the hard drives that much easier. Again, there is also no padding in place to serve as additional shock absorbers for the hard drives and to reduce the resonance within the NAS.

New to the AS5102T are the disc tray locks. Although they ensure that no HDDs that are installed could be accidentally ejected, it provides no security. It does not use a key as one would expect, but uses a flat-head screwdriver to lock and

unlock the tray.

Along with its design quirks, ASUSTOR's powerful and versatile system also has a few oddities, mainly that the system's Quick Start guide is located in the accompanying CD and that the easiest way to look for the NAS on the network is using a piece of software that's also in the CD. There should've been a specially designed site instead.

Despite all that, the AS5102T is a compelling choice for a NAS, thanks to its power, features, and versatility. Running it all is a 2.0GHz quad-core Intel Celeron 2.0GHz processor that is backed by 2GB of SO-DIMM DDR3L RAM that is expandable up to 8GB.

Furthermore, it is powered by ADM, one of the best custom NAS OSes in the market, which in turn, is backed by one of the most diverse NAS app markets.

by Azizul Rahman Ismail



TESTED & RATED

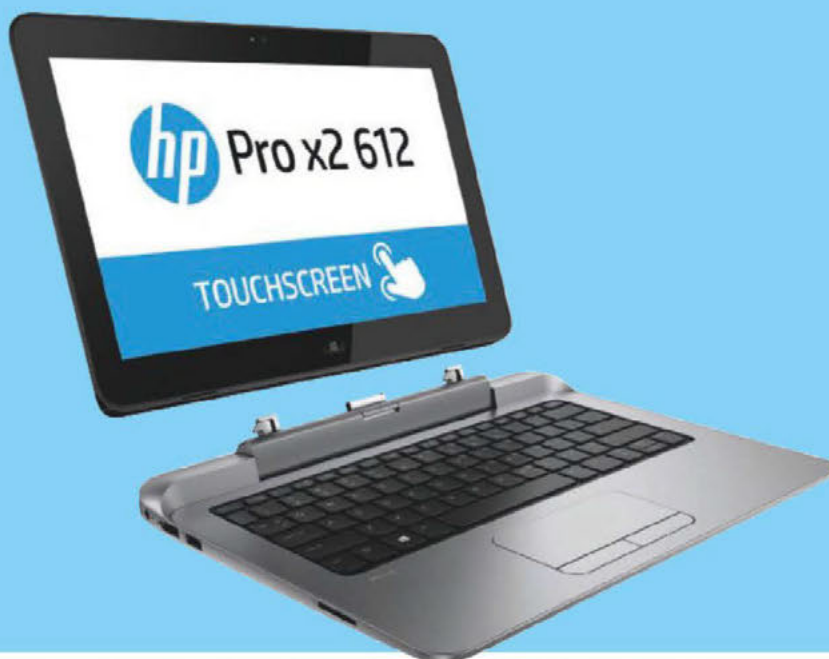
**8.5**<sub>/10</sub>

**HWM**  
MALAYSIA

Available at

**PLAZA LOW YAT**





# THE BUSINESS CONVERTIBLE

HP Pro x2 612 G1 (K7C42PA)

Made for business, the HP Pro x2 612 G1 touts itself as the hybrid PC for the enterprise environment. It is impressively flexible and capable, although it feels like HP took a different approach designing this 2-in-1 convertible.

In tablet form, the Pro x2 612 G1 is a well-built device. The textured back gives it ample grip, while the sliding power switch and front-facing speakers are a nice touch. However, we do question some of its design choices.

In addition to its 12.5-inch HD IPS display, the Pro x2 612 G1 has a thick bezel, which makes it feel large and unwieldy. Also, almost all of its ports, including the one for the stylus, are located at the bottom of the tablet, making them inaccessible once docked. On top of all that, the tablet weighs approximately 1kg.

All things considered, it's clear that the Pro x2 612 G1 was conceived as a notebook first, and a tablet second,

making the Power Keyboard an essential accessory. Its performance reflects this as well. The version that we tested is powered by an Intel Core i5-4202Y processor with Intel HD Graphics 4200 and it is very capable. It handles everyday workload, which includes word processing, heavy web browsing, and light photo editing on the side easily.

With the Power Keyboard, you will have access to additional ports and additional battery at the cost of weight. The whole package will weigh in at almost 2kg. Although we prefer to have the Pro x2 612 G1 attached to the Power Keyboard, we think that it could use some improvements, as there was a noticeable flex during typing.

The Pro x2 612 G1 also comes with a suite of enterprise features, including enhanced BIOS level security options, advanced networking options, and extensive system controls. Simply put, a corporate IT department would certainly find what

this device has to offer, a boon. Nevertheless, we were surprised that there were no fingerprint scanners.

Another strong suit of the Pro x2 612 G1 is its wide range of accessories. These range from travel keyboards ala tablet cover, to notebook stands that turn the device into a desktop PC.

Overall, we feel that the HP Pro x2 612 G1 is a solid choice for an enterprise notebook that doubles as a tablet.

by Azizul Rahman Ismail

TESTED & RATED

8.0/10

HWM  
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## AT A GLANCE

### OS

Windows 8.1 Pro 64,  
Windows 7

### Windows 7

Professional 64

### Processor

Intel Core i5-4202Y with  
Intel HD Graphics 4200  
(1.6 GHz, up to 2 GHz  
with Intel Turbo Boost  
Technology, 3MB cache,  
2 cores)

### Memory

4GB 1600 MHz DDR3L  
SDRAM

### Storage

SSD 128GB M2 SATA-3

### Price

TBA



The Micro-SIM slot, the microSD slot, and the stylus holder are located below the tablet and are inaccessible once docked.

## CONCLUSION

**A serious business-centric 2-in-1 that has its heart in the right place, but it needs a more modern execution.**

## SPECIFICATIONS

**Display** 12.5-inch HD IPS eDP LED-backlit (1,366 x 768) // **Ports** 1x USB 3.0 (tablet), 1x docking connector (tablet), 1x AC power (tablet), 1x DisplayPort 1.2 (power keyboard), 1x USB 3.0 charging (power keyboard), 1x USB 3.0 (power keyboard), 1x docking connector (power keyboard), 1x headphone/microphone combo (power keyboard), 1x AC power (power keyboard), 1x RJ-45 (power keyboard), 1x VGA (power keyboard) // **Dimensions** 317 x 239.5 x 23.3 mm (clamshell); 307 x 209.5 x 12.8 mm (tablet) // **Weight** 1kg (tablet), 1.85kg (tablet w/ power keyboard) // **Warranty** 1-year // **Contact** Hewlett-Packard Sales (Malaysia) Sdn Bhd // **Telephone** 1 800 806 770 // **URL** www.hp.com.my

# 24X7 AVAILABILITY

## Seagate Enterprise NAS HDD (6TB)

Back in January, we took the Seagate NAS HDD for a spin. It performed better than its competitors and we were suitably impressed. This month, we had a chance to get our hands on a 6TB variant of the Seagate Enterprise NAS HDD and put it to the test.

What differentiates between a standard NAS HDD and an

Enterprise HDD is durability, performance, and reliability. The Enterprise NAS HDD is designed to work in NAS systems with up to 16 bays and has a spindle speed of 7,200 RPM. This is in contrast with Seagate's standard NAS HDD, which spins at 5,900 RPM and is optimized for systems with up to eight bays.

To sweeten the pot, Seagate offers an optional data recovery service, which when paired with the five-year warranty, can provide an additional layer of comfort for SMEs. The Data Recovery Service includes recovery from RAID controller failure, lost RAID configuration, accidental re-initialization of the RAID array, power surges that causes multiple drive failures simultaneously, missing RAID partitions, reformatted RAID partitions, and virus damage.

Altogether, the Enterprise NAS HDD offers the ideal combination of capacity, service, and specifications of all its competitors.

All that aside, we put the Enterprise NAS HDD to work. To simulate real-world usage, we once again used the mixed media folder method. Using a mixture of smaller files consisting of small video, images, and medium to large size photos with an emphasis on graphics, the HDD achieved speeds up to approximately 15MB/s.

To simulate a major data transfer, we simulated the transferring of an assortment of audio, video, and database files that make up approximately 1TB. The Enterprise NAS HDD is calculated to be able to achieve this result in 5.5 hours.

When it comes to standard read and write speeds, this variant of the Enterprise NAS HDD was able to perform 180MB/s write and 150MB/s read speeds.

In simpler terms, the Seagate Enterprise NAS HDD (6TB) either outperforms or is up to par with its competitors. Add to the services and warranty mentioned above, and it becomes the most compelling NAS drive of its class in the market.

by Azizul Rahman Ismail



### AT A GLANCE

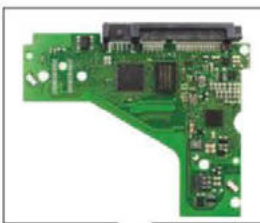
**Capacity**  
6TB

**Interface**  
SATA 6Gb/s

**Rated Performance**  
**Average**  
Up to 216MB/s

**Operating Power**  
As low as 6.9W

**Price**  
RM1,530 (or RM1,630 w/  
Data Recovery Service)



The circuit board is equipped with an LSI controller chip and 128MB of cache from the Nanya DRAM.

### CONCLUSION

**The Seagate Enterprise NAS HDD offers a good range of capacities and better performance at a good price.**

### SPECIFICATIONS

**Spindle Rate** 7,200 RPM // **Average Latency** 4.16ms // **Warranty** 5-years // **Contact** Build Technology Supply Sdn Bhd // **Telephone** (03) 7955 3699 // **URL** [www.seagate.com](http://www.seagate.com)

TESTED & RATED

**9.0**<sub>/10</sub>

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LEARN

# BIOLOGICALLY DISTINCT

■ Forget about physical keys or passwords. One can be duplicated, the other hacked. Biometrics is the next step in the evolution of security. After all, what better way to identify somebody than by things they have no control (thus no way to alter) over?

Text by *Salehuddin Husin*  
Art Direction by *Ian Chong*

## MORE INSIDE >

- OPTIMIZING YOUR HOME ENTERTAINMENT SYSTEM
- THE SCIENCE OF WATCH COMPLICATIONS
- TOP EXTENSIONS FOR A BETTER CHROME EXPERIENCE

# WE'RE ALL UNIQUE

Fingerprint scanners at banks or government facilities. Facial recognition cameras at sensitive areas. Retina scans for those incredibly high security places. Vein recognition scanners at office buildings. Everybody's seen them at one time or another and probably have been subjected to a couple at one time or another, but do you really know how they work? We do and we're spilling it all.

## FINGERPRINT RECOGNITION

One of the older methods of biometric security in the world are fingerprints. It's widely used in all manner of institutions from banks to schools. Fingerprint biometrics works by comparing a fingerprint taken with the original. The distinctive grooves and ridges, whorls and valleys of an individual's fingerprints are all unique. While there have been discussion on that might not be technically true, fingerprint biometrics all operate on the assumption that is it. Be it via computer or manually, all fingerprint comparisons follow a basic guideline called ACE-V, which stands for Analysis, Comparison, Evaluation and Verification. In the Analysis phase, the fingerprint is taken, analysed and scrutinized on whether it is usable. Dirt, grime or other factors can influence a fingerprint's readability as they can obscure details that separate one fingerprint from another.

Once that's completed, the fingerprint is taken to the Comparison phase. Comparison is simple in theory. An original copy of the fingerprint is referenced. Nowadays, this phase is done with computers for accuracy and time. If you've watched CSI or any crime movie or drama, you'd have heard somebody mention IAFIS at one point or another. IAFIS is the world's largest database of fingerprints, with over 72 million print records. Of course, not everybody uses IAFIS but we're talking about it as an example. Once a copy of the fingerprint is uploaded, programs will then compare minute details of the fingerprint with the original. Every nook and crevice is scrutinized and compared.

Fingerprints are unique but that can boil down to just a crevice being shorter on one fingerprint than on another's. Of course, such small differences are rare but it does happen so sometimes, a variety of similar fingerprints selected for close inspection. This is the Evaluation phase. It's this phase which makes or breaks the whole process. Once a fingerprint is selected as the closest match, it's finally on to the final step, Verification.

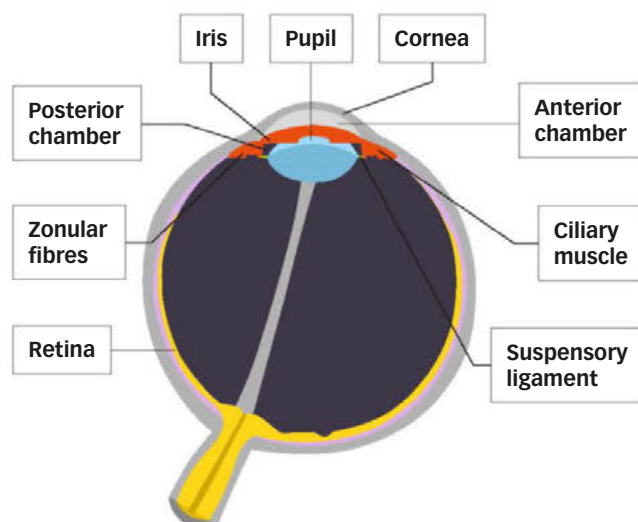
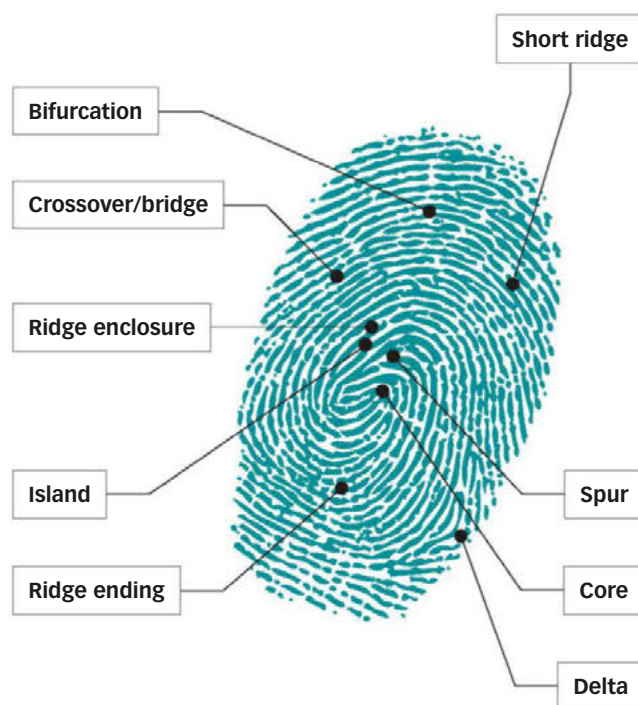
Verification happens differently depending what purpose the fingerprint is being used for. For security access and commercial users, verification is done by computer itself, with no outside party involved, from the initial Analysis phase all the way to the Verification phase.

## IRIS RECOGNITION

Iris recognition works on the same principles as the other biometric methods, although iris recognition can be a bit of a hassle. For one, it only works if the iris the camera is supposed to be verifying is a certain distance. The sweet spot is 3 – 10 cm, too near and the camera won't recognize the iris. Too far and the same thing happens.

Once a picture is taken though, the computer will break down the iris image into code, similar to how facial features are broken down in facial recognition software. The software takes the measurement of specific parts of the iris; the center and the edge of the pupil as well as the edge of the iris and (weirdly) the eyelashes and eyelids. Once broken into code, the software will try to match the code with one in its database. Iris recognition is much more accurate than fingerprint because there are more distinct and unique points on an eye than there is on a fingerprint - 200 on an iris compared to just 70 on fingerprints.

But first, a general description of what Biometrics actually is. Biometrics is just a general term to describe multiple recognition process. Fingerprint identification is a biometric process, so is facial recognition and even iris cognition. The rule of the thumb is that if something is biologically unique to a person and is not easily reproducible, it could be a biometric identification method. Here are some examples of biometrics and how they work.



PICTURES THE WASHINGTON TIMES • IMAGE GOOD ILLUSTRATIONS IAN CHONG



## FACIAL RECOGNITION

Facial recognition is a relatively new method of biometric identification. It requires specialized software that is able to recognize faces from other objects. There is a wide variety of software in the market now that does this but all of them use the same basic identification principles. They identify faces using the distance between the eyes, width of the nose, depth of the eye sockets, the shape of the cheekbones and the length of the jawline. Of course, different software might include more stringent measures, but that's the basis of any facial recognition software. More advanced software can even estimate aging, accidents or weight gain and take them into account. While Facial Recognition used to be a wholly 2D affair, nowadays it's all done via 3D for more accuracy.

An image or recording of the subject is sent to the facial recognition software. In the Detection phase, once an image or face is recognized, the facial recognition software will get to work. Upon detection of a face, the software can get the details of it up to a 90 degree angle (if in 3D), in what is known as the Alignment phase. What follows is called the Measurement stage, which has the system measuring the curves on a face and then creating a template. Once that's done, it's off to the Representation phase, where all the details taken down earlier are broken down into a unique code to represent them. That code is then searched among a database for a match, in what's known as the Matching phase.

Out of all the types of recognition mentioned here, the one that will continue to get better as technology improves is facial recognition. As cameras become more and more able to discern details, it'll only help with improving facial recognition, which means that one facial recognition software might be advanced enough to incorporate other aspects of biometrics (such as iris scanning) into one single package.



As technology advances, we'll come to a point when facial recognition will be able to tell if you've had plastic surgery done just by a scan of your face.

## VEIN RECOGNITION

It may sound gross but vein recognition is actually one of the more fool-proof methods of biometrics. Like irises and fingerprints, veins are completely unique. Identical twins, despite sometimes being able to have mirrored fingerprints, have never been found to have identical veins (mirror or otherwise). It turns out that veins are an even more unique feature than finger prints, with the left side of a person having completely different veins than the right.

That makes vein recognition systems incredibly simple, yet very accurate. Users simply place a finger, palm or wrist on a scanner. A camera then takes a picture of the part placed with near infrared light, which is then absorbed by the haemoglobin in the blood, making the vein appear black in the picture. From here on, it's a simple matter of assigning references and breaking the template into a unique code that can be searched among a database, just like the rest of the methods we talked about.

So there you have it, biometric security and how they work. Now you know what's happening the next time you're being told to look into a camera at an immigration checkpoint.



Veins are a great biometric system because they remain the same no matter your age. From young to old, veins stay in the same place.

## THE FIRST BIOMETRIC CONVICTION

Fingerprint recognition is the oldest form biometric identification technique that's still in use today. Fingerprints were found to be unique sometime around the 1850s, by an English Chief Magistrate named Sir William Hershel. It wasn't until decades later, from 1891 onwards, that fingerprint collections were started by enforcement agencies. The first criminal case involving fingerprints was a murder, in which the murderer was caught when a bloody fingerprint found at the scene of the crime was successfully matched to hers.



# WATCH COMPLICATIONS

In the world of mechanical watches, there are things known as complications. Despite the rather ominous sounding the name, it just means any feature that goes beyond the telling of time. Here are some of the most popular and interesting complications in watches today.

by *Kenny Yeo*

Before smartwatches and quartz watches, there were mechanical watches. They are so-called because they rely on a series of gears, wheels, and springs to tell time. Today, even the simplest time-only mechanical watch consists of over a hundred tiny little components. Imagine the complexity then when a mechanical watch can do more than just display the time. This is why watches with complications are so desirable and highly sought after by collectors.



## CHRONOGRAPH

A watch with the ability to measure periods of time is known as a chronograph, or in layman's terms, a stopwatch. The earliest chronograph can be traced back to 1816 and was invented by Louis Moinet, a French horologist. However, it was only 153 years later in 1969 that the first automatic chronograph was invented by Zenith. There are also many different types of chronograph.

**Monopusher** - Most chronographs rely on two pushers - one to start and stop the timing and another to reset. The monopusher chronograph only uses a single pusher to achieve all functions.

**Flyback chronograph** - While regular chronographs need to first stop and reset itself before it can start timing a new event, a flyback chronograph can reset and begin timing a new event instantaneously.

**Double chronograph** - Also known as a split-second chronograph, a double chronograph has two seconds hand, one of which can be stopped at any instant while the other continues to run. This allows it to time two events of different durations.





### TOURBILLON

Although not technically considered a complication, the tourbillon is nonetheless a very complex mechanism, and watches equipped with one often command stratospheric prices. Prior to the First World War, wrist watches were not commonly worn and most people carried pocket watches. These watches were often kept in the upright position, making it susceptible to inaccuracies due to gravity and errors in rate. To overcome this, Abraham-Louis Breguet invented a mechanism which would spin the escapement and balance wheel in a rotating cage, thus preventing them from being in a fixed position for extended periods of time. This averages out the effects of gravity and errors in rate. He called this invention the tourbillon.



### SECOND TIME ZONE

This complication allows the wearer to keep track of a second time zone. A watch with a second time zone often features a second hour hand or, in some cases, a sub-dial with additional hours and minutes. These watches are often accompanied by a rotatable or fixed bezel with 24 hour indications. Such watches are popular with frequent travelers and individuals who need to keep track of multiple time zones. This complication was invented by Rolex at the request of the now defunct Pan Am Airways, who needed a watch for their pilots to keep track of local time and the Greenwich Mean Time.



### PERPETUAL AND ANNUAL CALENDARS

Unlike quartz and digital watches, mechanical watches do not know the difference between months with 30 and 31 days, much less that February has only 28 days and that once every four years it has 29 days. Therefore, on months with less than 31 days, owners of mechanical watches with date displays would need to advance the date on their own. The perpetual calendar complication eliminates this inconvenience and is able to adjust automatically depending on the month and it even knows when it is a leap year and will adjust accordingly for it. Annual calendars, on the other hand, are able to automatically advance the date itself in months where there are less than 31 days, with the only exception being February. Simply put, they need to be adjusted once every year in February, hence the name annual calendar.



## MOON PHASE

As its name suggest, a watch with a moon phase complication displays the phase that the moon is in. This is a very traditional complication that is often found on classically designed or dress watches. It is also aesthetically pleasing to look at. In the past, it was used by sailors to gauge the tides. Some moon phase watches can display the phase of the moon so accurately that it only needs to be adjusted once every thousand or so years.



## STRIKING MECHANISMS

In the realm of high-end watchmaking, otherwise referred to more fondly amongst enthusiasts as haute horology, striking mechanisms are the most revered complications. These refer to watches that have mechanism which can chime the time using a series of gongs or bells. The earliest watches with striking mechanisms can be traced back to the early 1700s, and were made for wearers to tell the time easily at night - during this period, lights were uncommon and luminous materials for watches have yet to be discovered. These watches are extremely difficult to make and were seen as a status symbol. This has not changed much today and such watches remain extremely complex and as such command a very steep premium.

Watches with striking mechanisms can be broadly divided into two categories - sonneries and minute repeaters. There are two types of sonnerie watches, grande and petite sonneries. A grande sonnerie watch strikes the hours and quarters each quarter, meaning every 15 minutes. A petite sonnerie watch only strikes the quarters every 15 minutes - not the hours. A minute repeater is a watch that strikes the hours, quarters and minutes and can do it on demand.

In terms of complexity, sonneries are the hardest to manufacture because the act of striking the time requires a lot of power, and this power has to come from the watch's timekeeping mechanism throughout the day. Hence, a movement with sonnerie functions need to have a lot of power reserve and must be very efficient. Minute repeaters, on the other hand, are slightly simpler, because they are usually activated by a slider, which generates energy for the striking mechanism.



## GRANDE COMPLICATION

The term grande complication is often bestowed only on the most complicated of watches. Although there's no official definition, a widely accepted definition is that a watch can only be called a grande complication if it features a chronograph, perpetual calendar and minute repeater. It goes without saying then that this is a tremendous undertaking and only a handful of brands, such as Patek Philippe and Audemars Piguet, can lay claim to having a watch that qualifies as a grande complication.





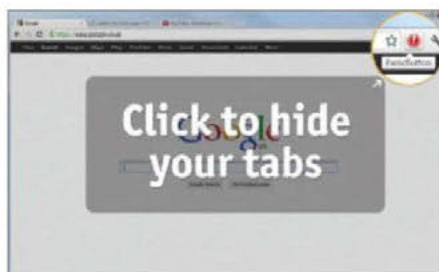
# SIX GOOGLE CHROME EXTENSIONS TO ENHANCE YOUR INTERNET EXPERIENCE

by James Lu

Google Chrome is by far the most popular web browser in the world, responsible for an estimated 46 percent of all desktop Internet traffic. But while Google has steadily added improved functionality to the browser over the years, nothing beats the perfect extension to enhance your Internet experience. Here are six of the best.

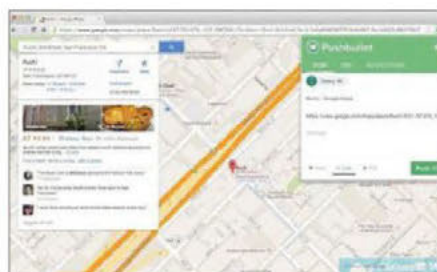
## PANIC BUTTON

The Panic Button is an essential Chrome extension for anyone that doesn't want to be caught looking at controversial online content, if you know what I mean. The panic button adds a button to your toolbar that will hide and save all of your opened tabs with a single click, allowing you to quickly hide any incriminating tabs if you have a suddenly unexpected visitor or you need to leave your computer unattended. Once things are back to normal, a single button press will restore all your tabs. Hidden and saved tabs can also be password protected so that only you can resume your shameful Internet activity.



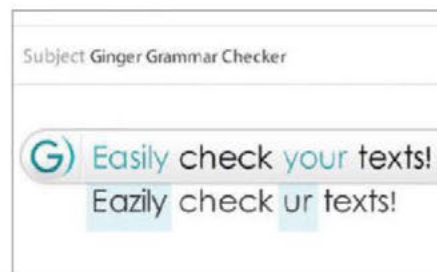
## PUSHBULLET

Pushbullet has long been an essential app/browser extension for anyone with an Android smartphone, and it's finally been made available for iOS too. Pushbullet allows you to easily share files, notifications, links and other material between your smartphone and your computer over Wi-Fi (and you don't even need to be on the same Wi-Fi network). You can send notifications like messages and calls right to your desktop, and you can also do the reverse, sending websites, maps, pictures, and files from your computer to your phone.



## GINGER

When you're arguing with strangers on the Internet, you know sooner or later someone is going to attack your spelling and grammar. Make sure you're bulletproof with Ginger, a proofreader extension that follows you throughout the web. Whether you're typing out an email, updating your Facebook status, or arguing with idiots on your favorite message board, Ginger will double check your spelling and grammar, highlighting and suggesting corrections for any mistakes. The add-on is multi-lingual too, and can translate and correct text in over 40 languages, so you can always switch to German when things get really serious.



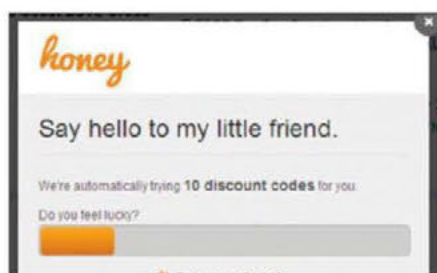
## THE CAMELIZER

Ignore its somewhat ridiculous name, The Camelizer is a must-have extension for anyone that enjoys online shopping. The unobtrusive add-on displays product price history information for items sold on Amazon, Best Buy, and Newegg so you can track if it's getting more or less expensive. In addition to viewing pricing trends for any given item, users can also sign up for price drop alerts via email and Twitter.



## HONEY

Another must-have for shopaholics, Honey does all the leg work involved with tracking down online coupon codes and discounts for you. Once installed, the extension will automatically find and test coupon codes for more than 100 online stores for you. Simply go about your shopping as normal, and then, when you're checking out, hit the 'Find Savings' button to have Honey track down and attempt to apply coupon codes.



## EXIF VIEWER

Have you ever seen a beautiful photo and wondered exactly what camera, lens, and settings the photographer used? If so, EXIF Viewer is the extension you've been looking for. This add-on displays any available information found in the photo's EXIF data, down to the camera used, ISO, exposure, aperture, and even geolocation information if available. While there's no guarantee you'll be able to capture the same shot by copying the equipment and settings, it's a good start.



# BASIC ANIMATION WITH MAYA 2015

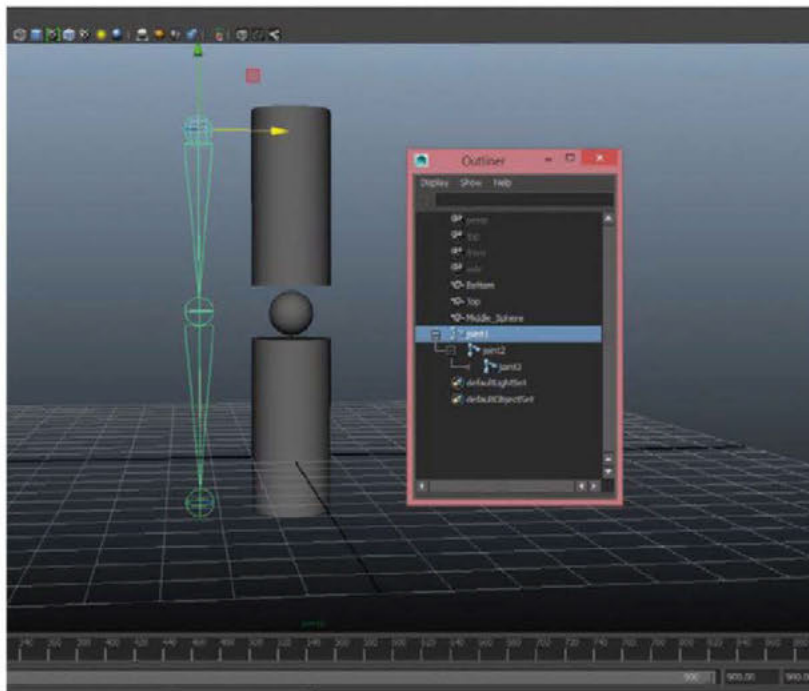
by Salehuddin Husin

Welcome back! Here's the final part of our basic Maya tutorial, animating your creations. Hopefully, you'd already have your models all ready for this part. Animation is tricky but once you get the hang of it, is extremely easy and fun.



1) First, we're going to be breaking down the basics. See the row of numbers at the bottom of the screen? That's your Time Slider. It shows where you are in your animation, as well as how long your animation is. Typically 24 frames is one second, although you can change this setting by going to Window > Settings/ Preferences > Preferences > Settings > Working Units. For now, we stick with 24 FPS, with a total frame count of 120 frames, for 5 seconds of running time.

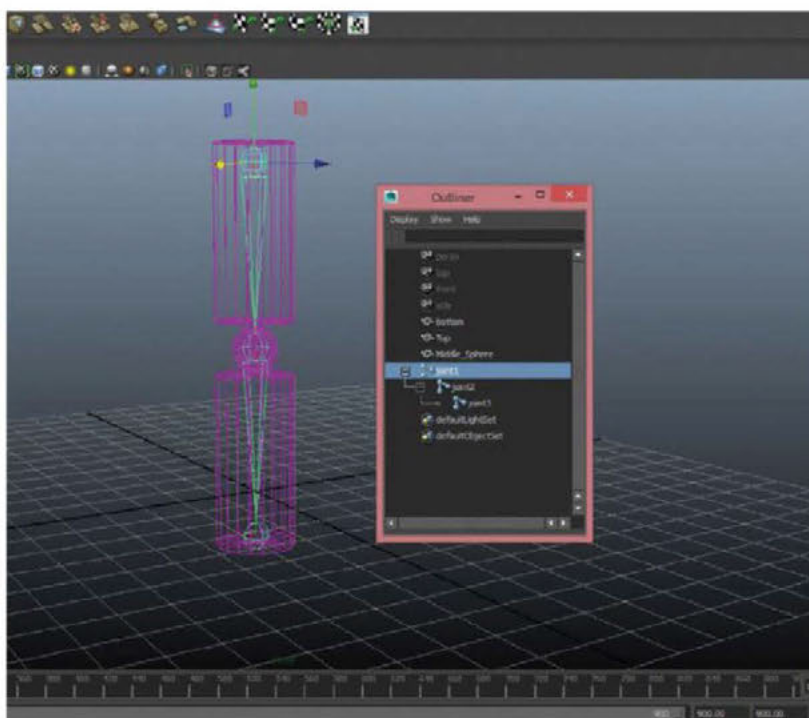
Make sure the Outliner window (Window > Outliner) is open. Enter Four View (hit Spacebar) and you'll get to four separate views of your scene. Find the one that looks Front or Side (either's fine). Now make sure the Menu Set's (upper left) set to Animation. This will make the Skeleton menu (upper middle) appear. Click it and select the small box near Joint Tool. The cursor will change into a crosshair and the Joint Settings menu will pop up. Using the Front or Side view, click the top of your model, the attaching joint and then the other models. In our case, we'll click the top of the first cylinder, the sphere and then the bottom of the other cylinder, for three joints. Depending on your model, you might want to have more.



2) Now go back to Perspective view (hover the mouse over the view in Four View and hit Spacebar) and make sure that the joints are INSIDE your models.

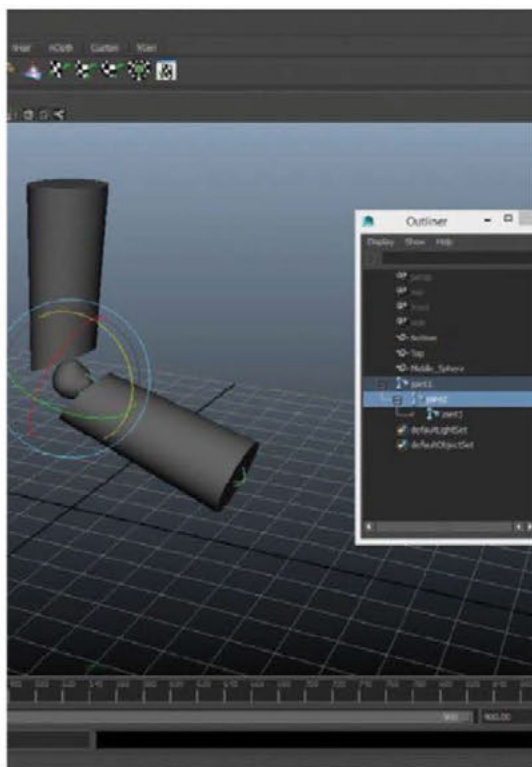
Here's the tricky part. In the Outliner, click on the first joint (Joint1 in our case) and then CTRL click with your first model (Top for us). Those two selected (and ONLY them), click on Skin (top menu) and then Smooth Bind. That'll bind the joint to the models. Now repeat with Joint2 to your second model and so on.

Once done, go back to the Outliner and select a joint. Since we have three, we're using Joint2 since it offers the most dramatic effect. With joints bound to the models, moving one will move them all.





**3)** Now that you can move the models using the joints, it's time for the animation. Set the time slider ranges to 120 (the two boxes at the 'No Anim Layer' box) and then click on 0 in the time slider itself. That'll take you to Frame 0, the beginning. Select the joint you want to animate and hit 'S'. S is the shortcut to keyframe a frame, meaning the frame saves the position of every object in that frame. Move to Frame 24, move your joint to a desired direction and then hit S again.



Congratulations, you've just made your first animation. With 24 frames done, you can move the Time Slider back and forth to view the animation. Just remember to hit S every time you want to keyframe an animation and you'll be set.

Animating with joints is the same, albeit much easier. Simply select the object you want, hit S at the frame you want and then move the object to anywhere you want, to any frame you want. Hit S and you're done. If you have knowledge in Flash animation, keyframing should be very familiar and intuitive to you.

Finally, once you have all the animating done, it's time to render. Hit Render Settings then Common. Under Image format, choose JPEG. Take note of the render directory then change the Menu Set (upper left) to Rendering. Pick Render from the top menu and then Batch Render. That's it! Alternatively, if you don't want JPEGs, you can render as AVI format, though that only works if you're using Maya Software to render instead of mental ray. Using that is easier but the trade-off is that all your texturing work and other fancy effects won't be rendered, just the basic polygons.

Assuming you rendered as JPEGs, you now need to link those JPEGs files into an AVI using a program called VirtuaDub (or similar). Just load your images and then export as a video. Enjoy your animation video and use it to impress your friends and family.

# BROWSE THE WEB DIFFERENTLY ON YOUR IPAD

by Zachary Chan

The way we use a mobile device is different from a desktop computer. Take software for example. On computers, you generally know exactly what you need. Smartphones introduced the concept of the app store, which is more of an exploratory experience. Similarly, the way you browse the Internet can be different. Most websites default to simplified versions when they detect a mobile device. And even if you force the desktop version to load, you'll often run into navigation and layout issues. If you're looking for an alternative approach on your iOS device, you could try Opera Coast, which has recently had a major upgrade to version 4.0. Here are four reasons why you should give Opera Coast 4.0 a try.

**1.** Opera Coast is designed for touch-based navigation. Yes, you can bring out the search bar if you want to specifically visit a page. However, like the App Store, results are visual rather than just plain text. Also, in Opera Coast 4.0, there is a new Discover feature where you'll get curated content pushed to you when you bring up the search bar. When you're on-the-go and don't really have time to sit down and digest your daily bookmarks, this is a great feature to hop around with topics that seem interesting. Who knows, you might just find a new favorite site.

**2.** Most websites have some form of share button, but it's not always apparent, and sometimes they don't have a link to your preferred social network or messaging app. Copy-pasting links from a website on a smartphone can also call for some finger gymnastics. Opera Coast 4.0 has its own built-in share button that allows you to post just about any content to popular messenger and social networking sites like Facebook, Twitter, WhatsApp and Line. Again, it does this in a visual manner so your link looks like a customized image rather than a text URL.

**3.** Opera Coast 4.0 supports Handoff, which is part of Apple's new Continuity features. This becomes a great way to continue surfing from your iPad to on your Mac once you've reached home (or the office). You can now jump between different browsers, screens and other devices too. While this feature is not limited to Coast, your other devices/browsers will need to support or have Handoff enabled.

**4.** Lastly, Opera Coast 4.0 finally comes with Opera Turbo compression technology. This feature was previously only available in the Opera Mini version of the browser for iOS. Opera Turbo is a server-side compression technology which routes the pages you're loading to dedicated Opera Turbo servers first, which then try to reduce data sizes as much as possible before sending it to you. This often results in lower bandwidth usage for you and helps load pages faster. While Turbo doesn't work on all content, especially encrypted ones like online banking, it is very useful for general surfing especially if you have a low data cap or in an area with very bad connection speeds.

# ALL ABOUT THAT BOOST

Setting up weBoost Connect 3G in your home.

by Azizul Rahman Ismail

To some, not having a cell signal is like a death sentence. Despite the great strides that has been taken to ensure that there is no such blind spots, it is unavoidable, worst of all, if the lack of signal is in our own home. There could be multiple reasons why this is, but, there is only one solution: weBoost.

## WHAT IS WEBEBOOST CONNECT 3G?

weBoost Connect 3G is an appliance designed to take 3G cell signals from outside the house and brings it into the home, eliminating blind spots. The system works with all 3G carriers and is perfect for not just the home, but offices as well.

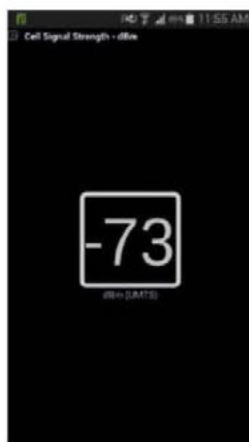
### 1) THE COMPONENTS

There are three major components to weBoost Connect 3G: the external antenna, the internal antenna, and the Connect 3G unit. Also included are cables to connect the components together, a USB power adapter, along with brackets and screws to mount them to walls or poles. All in all, a complete kit.



### 3) GETTING THE BEST SIGNAL

To get the best signal, it is recommended that the external antenna be installed on a pole on the roof. Connect all three components and have one person rotate the external antenna, while another person makes a phone call inside the building, or use an app to check the signal strength.



### 2) CONNECTING THE COMPONENTS

The weBoost Connect 3G comes with two generous coaxial cables. Note that although these cables are swappable, the port where each antenna should be connected to isn't. Also take note of the label at the top and bottom of the Connect 3G unit.





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Connect 3G™ - Indoor cellular signal booster kit for home or business

weBoost is here to bring you seamless mobile connectivity in your business or home. Your mobile phone is essential. You depend on it to stay connected to everything important - family, friends and work. You need it to share, text, search and keep yourself entertained. The weBoost Connect 3G signal booster ensures you have a reliable cellular connection indoors whenever you need it. It works with all cellular devices, including smartphones and cellular enabled tablets.

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# OPTIMIZING YOUR HOME ENTERTAINMENT SYSTEM

by Marcus Wong

After picking up that nice, large flat screen for your living room, the next thing you'll want for an enjoyable movie experience is fantastic audio. So, we've teamed up with the audio experts at TriTone ([www.tritoneav.com](http://www.tritoneav.com)) to bring you some tips for setting up your speakers for an optimal experience.

Setting up a decent home entertainment system requires the following:

- A minimum of 5.1 speakers, with an AV receiver, and a source.
- A display such as a TV Screen or a Projection Screen.

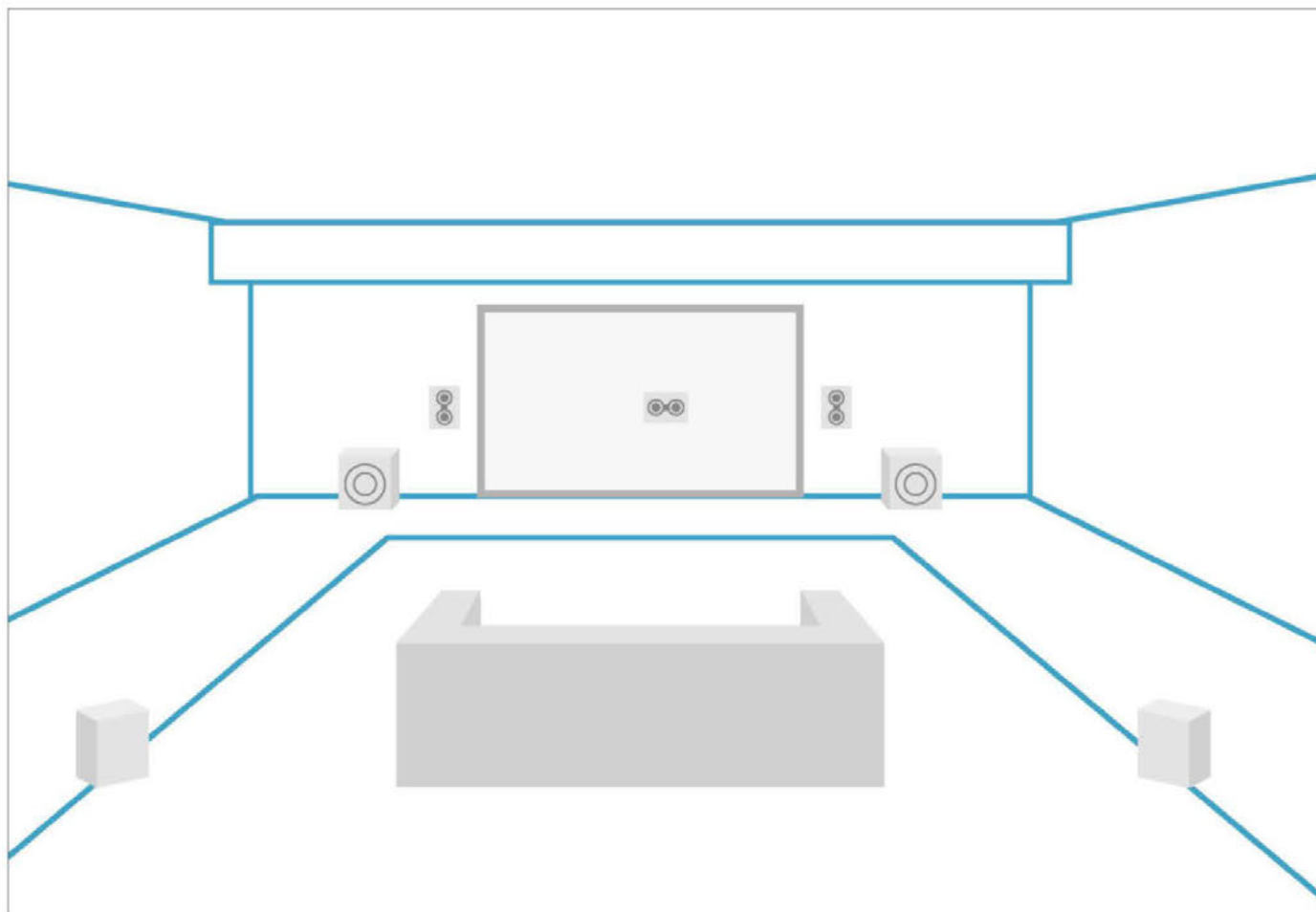
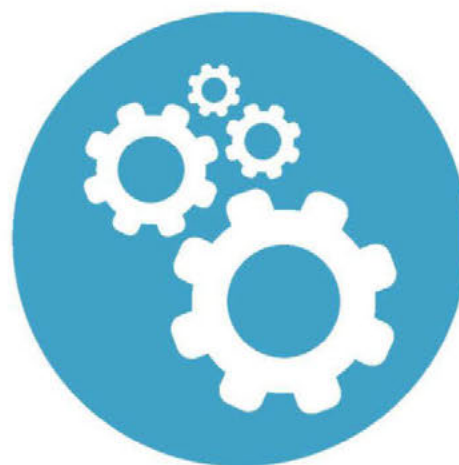
While humans are known to be able to hear tones from 20Hz to 20kHz, it has been observed in laboratories and anechoic chambers that we are unable to pin-point the direction of tones at 80Hz and below.

Try to look for subwoofers that can reach a frequency response of

between 20Hz to 80Hz, +/-3dB. That's a measurement standard for most loudspeaker manufacturers, and is considered "accurate". The smaller the difference in measurement (+/-2dB is more accurate versus +/-3dB rating) the better. The wider the frequency response, the better too.

The next elements of a 5.1 system we need to introduce are speakers that will produce the localizable range of sounds for our system. That's to say a minimum range of 80Hz to 20kHz, +/-3dB. Be they smaller satellite speakers that can be surface or ceiling mounted, or larger free-standing tower speakers, more care needs to be paid in their placement.

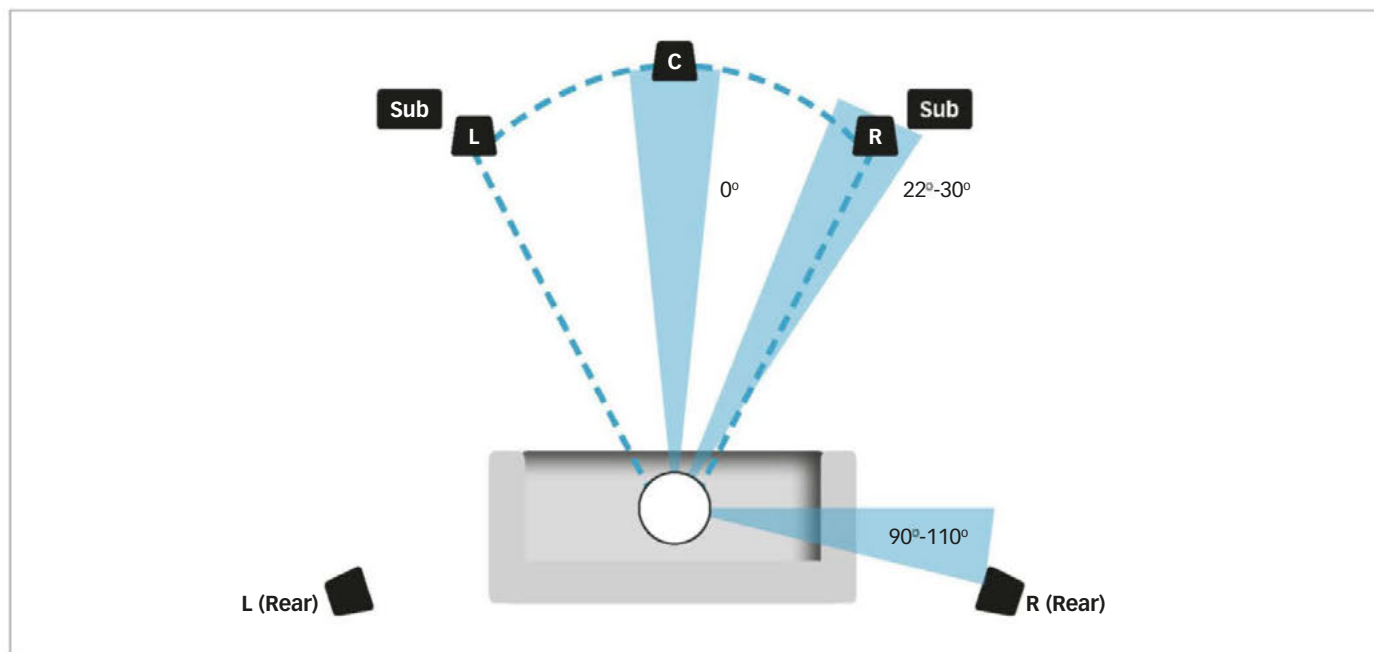
Here's a recommended layout of speakers in an ideal room condition:



ILLUSTRATIONS IAN CHONG



Here's a recommended placement of the speakers to achieve better seamless surround sound:



You will notice that the center speaker is situated to be right in the middle, behind the perforated or acoustically transparent screen (as they are in the cinemas).

If your display is a television, try to match the height of center channel with the height of the Left and Right as closely as possible to prevent height shifting of details as sound or effects move from side to side. It's like having a recording where the vocals appear much lower than the instruments and distracts the listener from the high-fidelity nature of the reproduction.

## PREFERRED SIZE OF SCREEN

Bigger is "better", until you find that you are shifting your eyes corner to corner of the display far too often while watching a movie.

It is recommended that the middle of the display height-wise falls about 15-degrees from your comfortable seating location.

Too big and too high a screen will cause quite a bit of frustration and fatigue as you'll be tilting your neck too high, or rushing to shift your eyes from one corner to the other.

Your speakers and display are the interfacing points of your system to the room and to you, so are the most important elements of a good Hi-Fidelity system.

## "BRAIN" AND "MUSCLE"

Speakers need to be powered by amplifiers, which we like to call the "muscle", as they deliver the signal. The higher the power, the less strain it is under when driven hard, resulting in lower distortion. Digital movies and music mediums need to be decoded by a processor, which is the "brain" of the system.

In a system built based on space constraints, an integrated AV Receiver, can be a great solution. These days, receivers also come with room correction software that can be useful in acoustically terrible rooms. However, because they're specifically configured for your speakers, they may push them too far, causing distortion and in an extreme case, damage.

Thus, it's recommended to use such correction software under proper consultation.

## WHAT IS 5.1?

5.1 refers to 5-channels, and 1 subwoofer channel. ".1" is so because subwoofers are not capable to play the mid range and high frequencies, and usually stops playing effectively to up to 250Hz or so.

### If you have two subwoofers, does that mean you have a 5.2 system?

Not necessarily. Often the subwoofer signal is shared with two subwoofers to balance the low frequency effect in a room, preventing the sound from seeming lob-sided.

There are however, new technologies today that are mastered in the studios with two subwoofers with discreet information.

### How does a soundbar compare?

Having speakers at the side or rear helps a great deal with getting the listener more involved in their movies. Most soundbars available at this point have complementing subwoofers that unfortunately need to play above the localizable frequencies, causing the subwoofer to be localizable.

Many sound bars rely on the room's acoustics to provide the surround effect, however, this cannot be consistently achieved due to variations in room acoustics and layout for every single home. Nevertheless, they are decent extensions from the in-built speaker system found in the regular television.






## SAVING THE PLANET ONCE MORE

Picking up after Marvel's The Avengers – the biggest superhero movie of all time, Avengers: Age of Ultron begins with Tony Stark's attempt at jumpstarting Ultron, a self-aware, self-teaching AI, which quickly goes awry when he comes to the conclusion that peace can only be achieved with the destruction of mankind.

It is now up to Iron Man, Captain America, Thor, The Hulk, Black Widow, and Hawkeye – with the support from Nick Fury and Maria Hill, to put a stop to his nefarious plans. Along the way, they will encounter the powerful twins Pietro and Wanda Maximoff, and meet an old friend in a new form, Vision.

 /MarvelMalaysia

### PRIZES



**2X** Marvel's Avengers: Age of Ultron – Ultron Light-Up USB



**2X** Marvel's Avengers: Age of Ultron – T-Shirt



**4X** Marvel's Avengers: Age of Ultron – Card Wallet

### THE QUESTIONS

Q1: Name the actor who portrays Tony Stark in **Marvel's Avengers: Age of Ultron**.

- A Robert Downey Jr.
- B Paul Bettany
- C Aaron Taylor-Johnson

Q2: Who are the powerful twins that The Avengers encounter in their journey?

- A Billy and Tommy Maximoff
- B Erik and Lorna Maximoff
- C Pietro and Wanda Maximoff

Send your answers to [contest@bluinc.com.my](mailto:contest@bluinc.com.my), with subject 'HWM April 2015 – Marvel's Avengers: Age of Ultron Contest', with your particulars below:

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- Contest period is from 1st to 30th April 2015, email must reach us by 12pm
- Open to all readers of HWM Malaysia
- Employees of Blu Inc Media Sdn Bhd and The Walt Disney Company (Malaysia) Sdn Bhd, their contractors and business partners, as well as immediate family are not allowed to participate
- Only one email entry per household, additional email will be disqualified / ignored
- All decisions made by the judges are final and binding, no correspondence will be entertained
- Prizes are not exchangeable with cash and are non-transferable
- Winners' names will be published at [hardwarezone.com.my](http://hardwarezone.com.my)
- Prize must be collected within one month from date of announcement
- Winners must claim his / her prize at his / her own expense

Merchandise for **Marvel's Avengers: Age of Ultron** courtesy of The Walt Disney Company (Malaysia) Sdn Bhd.



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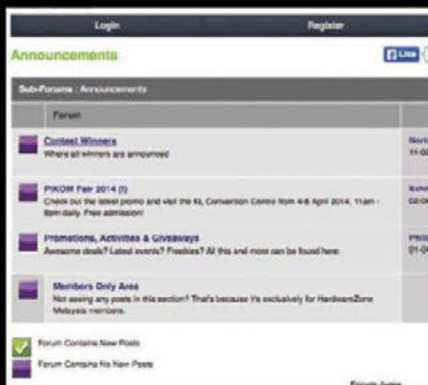
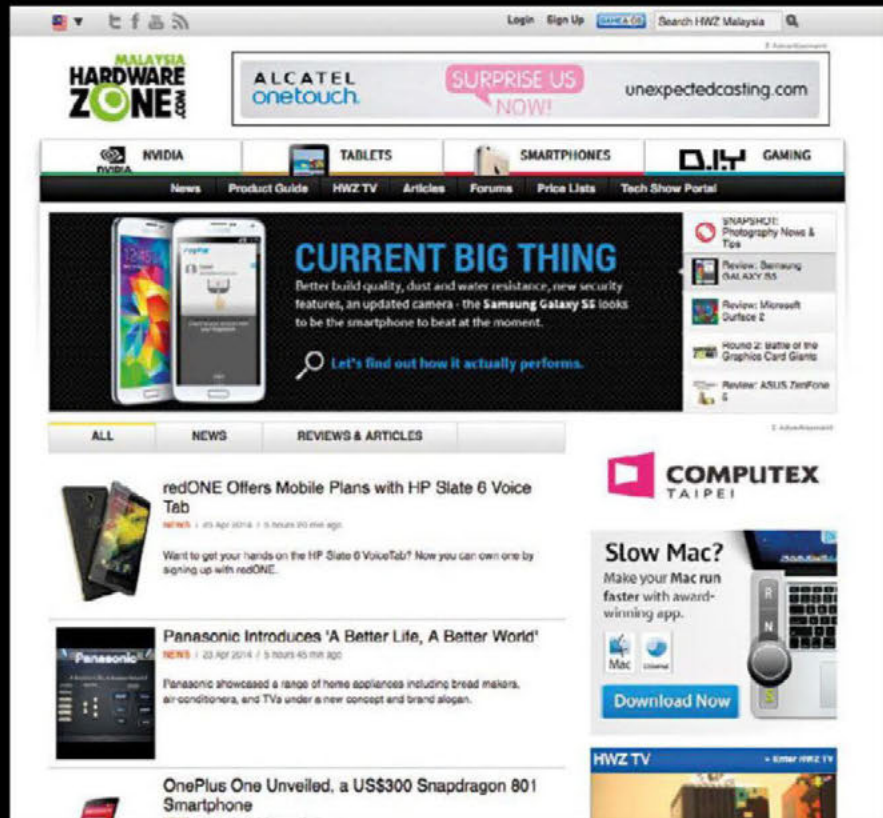
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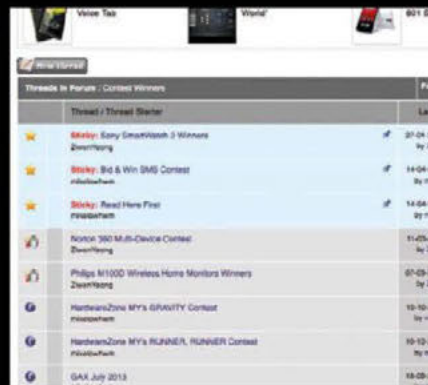


# HWM MALAYSIA CONTEST WINNERS!

Did you join one of our contests? Not sure if you've won? To find out, head on over to our new HardwareZone Malaysia site @ [hardwarezone.com.my](http://hardwarezone.com.my) and check out our new Forum (on the top navigation bar).



There you'll find Contest Winners.



Click on it and you'll see the list of contests we have had – explore them to find if your name is there!



If it is, see how you can claim your prizes!

**Congratulations to all our lucky readers and for those who didn't win anything – keep trying as we have new contests every month! Good luck!**

This Tomy Scramble handheld game, circa 1980s was the epitome of the side-scrolling arcade shooter. It ran on 4 'C' batteries, had only up/down controls and one button.



PHOTOGRAPHY VERNON WONG ART DIRECTION KEN KOH





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### UPPER GROUND (UG)

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Communications,  
Computers, Games,  
Audio-visual, Beauty,  
Wellness & Fashion,  
Restaurants & Cafes,  
Bookstore, Money  
Changer

### 1<sup>st</sup> LEVEL (L1)

Mobile Phones, Mobile  
Accessories & Clinics,  
Telco Services, Cafés

### 2<sup>nd</sup> LEVEL (L2)

Computers &  
Components,  
Accessories,  
Softwares, PC Clinics,  
Gadgets

### 3<sup>rd</sup> LEVEL (L3)

Smartphone/Tablet Zone  
IT Hypermarkets,  
Computers &  
Components,  
Gadgets, Software  
Accessories, PC  
Clinics, Cafe.

### 4<sup>th</sup> LEVEL (L4)

IT Hypermarkets,  
Service Centers,  
Cafés, Offices, ATM



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Mobile

Digital Cameras

Gadget

Gaming

Dining

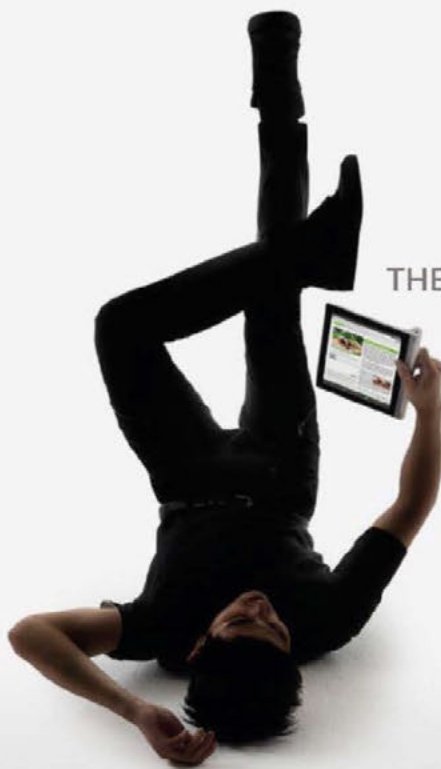
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